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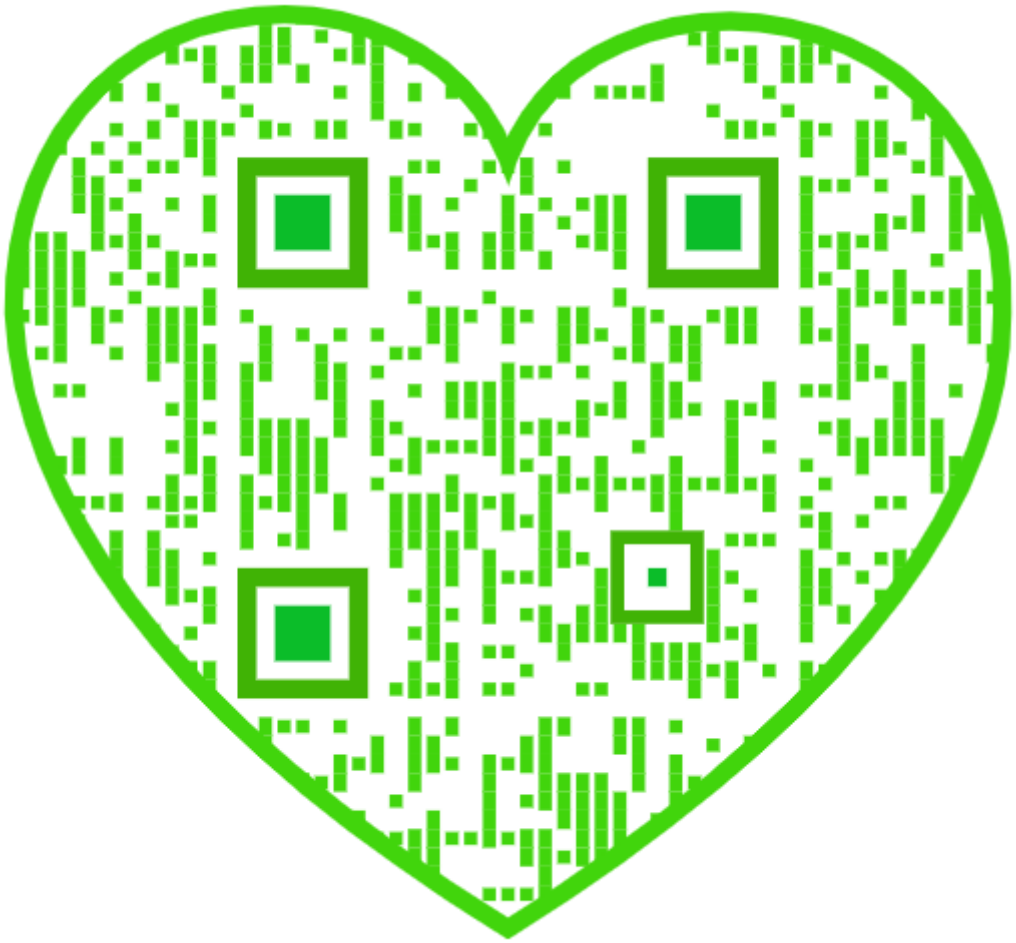

H. Shaw

SNOW'S

MODERN BARN SYSTEM

OF RAISING AND CURING TOBACCO.

FOURTH EDITION.

BALTIMORE
PRESS OF THE FRIEDENWALD CO.
1897.

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BY
W. H. SNOW.

SPECIAL NOTICE.

After three years of costly litigation the writer and patentee holds all the patents and trade-marks which he formerly assigned to the Modern Barn Company, and is now prepared to sell territory and tobacco sticks and baskets and material of all description used in the construction of barns.

During the last three years the Snow process of curing tobacco has received marked attention from seven different States, whose Experimental Stations have issued bulletins highly commending the new method, and in some States have entered into an exhaustive analysis of the tobacco after curing, fully demonstrating the superiority of the new plan, while W. F. Clark received the highest award at the World's Fair for tobacco grown in Louisiana and cured in the Snow Barn for cigar and chewing tobacco.

My inventions are fully covered and protected by a number of Letters Patent of the United States. The short cross wire with its sharp fixed points settles forever the process of the leaf cure. As the placing of the eye in the point of the needle held the perfect sewing machine and prevented any man from defrauding its inventor, we intend that our device shall be held for the benefit of the man who invented it. There have been, and we expect there will be, many attempts to rob the inventor of the fruits of his labor by evasion of his patented rights. None have succeeded and none can succeed.

My patents cover, among other things, all tobacco sticks with projecting prongs on each side, at right angles to the stick, by any and all permanent means of attachment, no matter how attached or fastened.

I will, at any cost, protect *customers* as well as myself against any attempt to evade or infringe upon my rights by *using*, *making* or *selling* any part of our patented inventions. I give this early notice of my purpose that no one may have trouble. My next move will be ACTION.

W. H. SNOW,

January, 1895. *High Point, N. C.*

PREFACE TO FOURTH EDITION.

In offering to tobacco growers the fourth edition of my book, my aim is not to add anything new, except so far as the rapid strides of the "Modern Barn" and "Stick for Log Barn" wire-curing process seem to call for it.

My former pamphlets and circulars have made tobacco growers throughout the country so well acquainted with the merits of my process that it seems superfluous to add anything. But the demand for "more light" has been so steady, and the calls for the book so numerous, that the previous editions have been entirely exhausted. My present object is to comply with the requests of my friends in all parts of the tobacco region, and to answer, generally, the many questions which are constantly asked me. The enormous growth of my correspondence has made this method a necessity. I do not expect to be able to fully accomplish my purpose, but will hereafter endeavor, as I have heretofore done, to reply to all letters as promptly as possible. To my patrons and others I still say: I will never grow weary of reading and answering such letters as I am daily receiving. I take this opportunity of returning my thanks to the great multitude who have so ably helped me to make tobacco growing and curing a source of pleasure and profit to the farmer.

Address correspondence to

W. H. SNOW,

High Point, N. C.

January, 1895.

INTRODUCTION.

The production of tobacco is one of the great industries of our country. Its use is considered by a great portion of our people a necessity. Tobacco forms an important expense account with such people, and if it be claimed that it is only a luxury, it is the only luxury they have, and one which is indulged in with the least possible injury to the human system. "The laborer in the gloomy mines, the honest tiller of the soil, the hard-worked railroader, and the busy man of the counting-room, all go about their tasks with lighter hearts under the mild and soothing influence of tobacco. From early in life until the shadows of twilight begin to gather about him, man's most constant companion is the bewitching weed. Other friends may leave him, his bosom companions pass away, and the vigor of youth give place to tottering age, but tobacco remains to soothe his sadness and cheer the gloom of his life." He is entitled to have it in its best possible form. In money value Tobacco stands number seven among our field crops, and aggregates six hundred millions pounds annually. It brings the planters nearly seventy-two millions dollars each year and the manufacturers as much more, making one hundred and forty-four millions in the industry.

There is great need for a scientific method of cultivating and curing the crop, which is wholly wanting at the present time. "A great mystery doth hedge about" the industry. There are a great many varieties of tobacco and almost as many methods of cultivating and curing; all these methods cannot be right. The great bulk of tobacco grown at the present time is cured as the Indians cured the weed four hundred years ago. Demonstration has conclusively proved that the red man's method is based neither upon science nor economy. It is wasteful in both virtue

and quantity from every point of view. The white man, with few exceptions, has blindly followed his red brother's tobacco trail, the only deviation being that the white man builds a shed to shelter his tobacco from the storms, while his red brother hung his tobacco on the bushes or in the peak of his wigwam to dry it. To shed the light of science, to group common sense methods, to help the planter out of the uncertain blind way in which he is now groping, is the object of this little book.

The 12th of October, 1892, completes the fourth century since the discovery of the Western Hemisphere by Columbus. At the same time Columbus reports the natives of the new world smoking the dried leaves of herbs which they called tobac, rolled in the leaves of maize. There have been many speculations and suppositions indulged in, that the Chinese or the Hindoos or the Persians had a knowledge of tobacco before its discovery by Columbus. But neither Moses, Herodotus, Pliny or Josephus, or any historian previous to the discovery of America, gives us any light on this subject. It is therefore safe to believe that tobacco is a native of the Western Hemisphere, and from here it has spread over the face of the whole earth, among every kindred, tongue and condition of mankind. It numbers among its devotees the highest type of civilized and enlightened men, as well as the lowest and most barbarous; every age, sex and condition use the exhilarating weed. The edicts of crowned heads, the bulls of popes, the assembled wisdom of legislative bodies, the stern commands of parental authority are all alike powerless to even check its use in the slightest degree. The dread of present or future punishment has no terrors for the man, woman or child who has once tasted the seductive weed. Much has been written about the effect the constant use of tobacco has on the human race. So far the testimony is neutral. There is no evidence going to show that any race of men are less hardy or have abated in mental calibre during the four hundred years of the constant use of the weed. When we come down to individuals, there are as many

centenarians who have smoked and chewed tobacco as can be found among the abstainers. Many die young who never use tobacco, and many live to a ripe old age who have used the weed from their youth up. That it is harmful to the human race collectively there is no evidence; believing this to be so, we think it highly commendable to give the weed to those who love it in its best form and at the least cost. This shall be our aim, and if our plans are followed, we will give a choice chew, a choice smoke and a choice cigar at the price now paid for the cheap, poor stuff, which forms the bulk of the goods now on the market, which are exceedingly unwholesome and give no pleasure to the man who uses them. The evil lies mainly in a bad system by which the leaf is cured, while the faulty system has nothing better than custom to recommend it.

CHAPTER I.

The successful growing of tobacco pays the planter a better price for his labor and expenditure than any other field crop. The uncertainty of the crop hedges it about with a mystery. The difference between a crop handled right and a crop equally good in the field and handled wrong is so great that many times it appears to the uninitiated like gambling, when the facts are the planter had all the cards in his hand to win his money, but failed to do his part at the right time and lost. That the business of tobacco growing can be reduced to a science and made as sure as the production of any other crop grown in our fields the writer feels certain. During the last five years tobacco raising has been made plain and has been tested by thousands of planters in five different States, and in no instance made known to us has there been a single failure to obtain good results when the planter followed our advice. This has been so uniformly the case in all parts of the country and in all varieties of tobacco that we are fortified in the belief that we have found the true science of growing and curing tobacco; and furthermore we have greatly reduced the cost and simplified the process of the manufacture of plug, smoking tobacco and cigars. Let no man think a crop of tobacco can be grown without care of the right kind bestowed at the right time; vigilance always is the price paid for a good crop of tobacco. "Intensive farming" is the kind of farming that will give the best results always in the cultivation of tobacco. It will pay better to grow fifteen hundred pounds on one acre than to grow sixteen hundred on two acres,—the plowing, the suckering, the topping, the worming, and the gathering consume twice the time and only one-sixteenth more tobacco of an inferior grade.

CHAPTER II.

"He that goeth forth bearing good seed shall return with joy and bring his sheaves with him." This was a subject well understood in King David's time, and is as true now as then. To ignore this great underlying principle is to court failure in all crops.

The first great requisite is good seed of the right variety. If a planter thinks any kind of seed will do as well as any other he has made a failure in the beginning of the crop. Blood tells on the race course; the "two-thirteen" trotters are not bred from scrubs, neither sire nor dam.

The dairyman seeks carefully for the pure-bred Jerseys and Devons when he wants a large yield of milk and butter; the wool grower seeks the pure-bred merinos for a heavy fleece of wool, or southdowns for heavy quarters of mutton; the pork raiser has long since learned that a bushel of corn returns him twice the money fed to a Poland China or a Jersey Red swine of pure breed than when fed to a bush hog with his ears set in the middle of his back. Rust-proof oats, fulcaster wheat, Bullock seed corn, all tell the planter that it will pay him to look well to the quality and variety of his tobacco seed; the seed should be renewed every two or three years.

The seed should be brought from the shorter to the longer season; from the colder to the warmer. Never from the south northward if it can be avoided. If the planter saves his own seed from his own crop, let him save only the most vigorous plants, and then only the earliest pinnacles and but few of them on each stalk. A man is safe if he allows Col. R. L. Ragland to send him his seed every year; his postoffice is Hyco, Va.; "the world buys tobacco seed of him." If you wish to grow tobacco exclusively for plug or choice chewing tobacco, the Hester, the Orinoco, or Gooch are varieties which have stood the test of time, and are favorites with many planters. The writer's experience has been satisfactory with the Hester; for cutters the Hyco and the White Stem stand at the head for South Carolina, North Carolina and Georgia. For cigars, the Zimmer Spanish, when

cultivated and cured right, has few superiors in texture and none in flavor; it will produce twelve hundred pounds per acre. The Connecticut seed leaf stands at the head for wrapping cigars, and will probably never be excelled for that purpose; when it is cured in the Snow Barn the Sumatra wrapper takes a back seat. The Cumstock Spanish is also highly spoken of as a fine grower, and gives satisfaction to the cigar maker and smoker. The Havana seed leaf is grown by Col. Ragland, and as he is a scientific seed grower it is safe to get his seed. If the writer was growing tobacco in States south of Virginia, we would depend on that latitude for our seed, as it would travel in the right direction, from the north to the south; its vitality and time of maturity would be quickened by each remove towards the equator.

CHAPTER III.

PLANT BEDS.

The tobacco plant differs in some respects from most others in this: it grows faster, matures quicker, and produces richer leaves when pulled up and transplanted, than if the seed were planted like corn or beans and allowed to stand and grow where planted; hence the universal custom of growing the plants in hot beds or seed beds. The seed of the plant is the smallest known to the husbandman; a single ounce contains eight hundred and seventy-five thousand seeds; if every seed should produce a plant, one ounce would furnish plants for one hundred and seventy-five acres, counting five thousand plants per acre. The plant question is a very important one with the planter, and his best effort is put forth to obtain good plants for his first setting, and should be as early as the season in his latitude will allow and escape late frost. The plan most in use in Virginia is too seek the bank of some small creek in some sheltered spot, and burn the ground over with trash wood to the depth of two inches, and rake in the ashes with manure; thoroughly pulverize the top of the soil, and sow the seed and cover with canvass. This is done about the first of January, when the plants will be set the first of May. While this plan is a cheap one, and does well for Virginia and North Carolina, there are a great many who wish to grow tobacco that are not blessed with a creek running through their farms, and the uncertainty of the beds getting the attention needed at the proper time, while the plant bed is so far from home, the writer is inclined to adopt a more sure way, which is the hot-bed system, right at home, where the beds can be watched and watered at will, and kept back or forced as the planter wills. In this way the planter commands success; he can put forth his hand and grasp it; and while his neighbor is scouring the country buying plants from his neighbors, and setting his crop with every known variety, which will not give him a uniform crop either in the field or curing barn; hundreds fail here at the start. The failure in a tobacco crop can as often be traced to the plant bed

as to any one cause. Knowing by hard experience the importance of these facts, we say to every planter who expects to follow tobacco growing, construct at once a hot bed of the most approved pattern, in the most convenient and sheltered place about your building. The sash should have about six inches fall in three feet facing the south. For convenience the bed should not be more than six feet wide and as long as needed; fill the bed within six inches of the top with sandy loam, well mixed with well rotted manure and guano; do this in the month of November. Give the bed a thorough wetting, and put on the sash, and grow your weeds and destroy them before you sow your tobacco seed.

About the first of February, for Georgia and South Carolina, sow your seed, get a straight edge two inches wide and make a very slight mark on each side of the strip, and scatter the seed along the edge of the strip on both sides, then turn the strip over; don't sow too thick, nor cover too deep; in fact do not cover at all, but pat the top of the ground with a plank with your weight on it. When the plants come up they can be thinned out if too thick or re-sowed if too thin. If the plants are likely to be too early, they can be kept back by taking off the sash or by shading with plank if the sun is too strong in the day time; if they are too slow they can be quickened by a liberal sprinkling of warm water, leached through horse stable manure. The point is to have the right kind of plants at the right time at all hazards, and a plenty of them. This is the first important step to take if you would make money growing tobacco. In taking plants from the beds, which is called drawing "plants" great care should be taken not to injure the stem by bruising; do not press the bud which is in the middle of the plant; if the bud is bruised in any way the plant is useless; the product if any, must come from a sucker below the bud, and will be inferior tobacco. The plants when four inches high are ready for setting. In the preceding chapter we strove to impress upon the planter the necessity of having good seed, and plenty of stocky plants at the first setting; by stocky plants we mean plants that have not been grown so thick in the beds as to give them a long slender shank. In the following chapter we show the necessity of having good soil.

CHAPTER IV.

GOOD SOIL NECESSARY.

To grow less than one thousand pounds of tobacco on a single acre is not good farming, and twelve hundred pounds should be the rule in Georgia and South Carolina. It is thought necessary in Virginia and North Carolina to have virgin soil to grow a good crop of tobacco. This plan has been practised until these states have been largely denuded of their forests, and their hill sides seamed with gullies, and strange to say their planters are not rich. Cutting down a crop of timber and burning it in log heaps to obtain a crop of tobacco is paying dear for a whistle; too much sugar for a shilling.

Good rich tobacco can be grown on old land; it is being done in South Carolina every season, and it can be done elsewhere. There is a reason why new soil is better than old land. The only one I can give is the top soil is full of vegetable mold; this element is lacking in old land. We have got back to first principles now; the soil is lacking vegetable matter, nothing left but silica of the primeval rock, which in itself is unable to sustain plant life, although pulverized by the forces of nature if unmixed with vegetable matter, its fertility is wholly wanting. This want is starving one half of the farmers in the world; without this, no man need try to grow good tobacco. In this vegetable mold lies the chemistry of all plant food; the humus, the very life of the tobacco plant. It is useless to coax Mother Earth with nostrums; don't think to feed the hungry soil by dusting it with guano applied with a spoon. It is "just over the hill to the poorhouse" with such farmers, whether they grow tobacco, cotton or corn. This fact being established beyond any controversy, and we have set out to grow a good crop of tobacco, not less than one thousand pounds per acre.

If vegetable matter is lacking in the soil which the planter finds otherwise suitable let him sow cow peas and turn them under; work with it two years in this way; get three crops of peas into the soil by that time, with three hundred pounds of guano

to the acre; then try a crop of tobacco, and if you will plow in your tobacco stalks and suckers before the heavy frosts kill them you can continue to grow heavy tobacco year after year on the same ground. By returning the old stalks to Mother Earth much of the elements required for the new stalks are found in the old in a concentrated form; the decomposition of the woody elements go to form the humus needed, and with a quantity of woods mold added each year tobacco equal to new land tobacco can be grown year after year without any deterioration; or if the planter has two fields a crop of cow peas every other year, and a crop of tobacco every other year, with the tobacco stalks plowed in, will keep the crop equal to new land tobacco; and if fertilized with guano twelve hundred pounds of good tobacco should be the yield per acre.

This method of obtaining vegetable mold in the soil is less expensive than cutting the timber, and clearing new land, and for common plug tobacco the product is all that is desired. Let the planter bear in mind that vegetable mold is an indispensable requisite to the perfection of the tobacco plant, and without it failure is the rule.

Fortunately for the average farmer, it is the cheapest fertilizer he can obtain; having selected a field with a sandy top soil with a clay base from four to six inches beneath. If the subsoil be yellow all the better as this color is supposed to impart its peculiar properties to the tobacco grown upon it. In our judgment, however, if this color has the right grit, it is extremely friable when disturbed by the subsoil plow, and absorbs and holds the rain a few inches below the surface, where it is available in dry time. The sandy soil lets the rain fall through and the clay arrests its passage, and holds it for future use; this kind of soil has given the best results in all parts where tobacco has been grown. Land of this description should be turned over with a turning plow about the first of January, again in the middle of February. At the second plowing the subsoil plow should be used about eight inches deep in the furrow, immediately behind the turning plow. Do not turn up any of the subsoil. This winter plowing destroys the pupa of the black cricket which produce the cut worm, a great pest when the plants are young. The chrysalis of the bud worm will be disturbed at the same time, and left where the frost will put an end to them; besides the

winter plowing is as good as a coat of manure, as it gives the frost a chance to thoroughly pulverize the lumps in the soil. In the winter time when little else can be done the compost heap must be made. If we are to grow a crop of ten acres we want a big heap. We want all the stable manure we can get. We will bed our stock with litter of leaves and loam so as to lose none of the sig or liquid manure. We will get all the nitre we can into our compost heap. We will haul woods, mold or top soil from our timber land and use cotton seed if we have it; we will put all kinds of manure, but wood ashes. We will keep them out of our compost and apply them broadcast. After we think we have enough compost we will get a few more loads for fear we may be short, as we have started to get twelve hundred pounds per acre, we cannot afford to fail. A few days before we are ready to set our plants, we will lay off our rows four feet apart with a turning plow, and put out our compost by scattering it liberally in the furrows, and cover the same by throwing the soil back. We will run our rows when practicable, north and south; this will give every plant in the field equal chance to the sun, both morning and evening; the rows should be four feet apart to give ample room for the gathering of the leaves with baskets, and to get the sun to the roots of the plants, also to run the cultivator after the plants are well grown and not bruise the leaves, as they are very susceptible to injury while in the green state. We shall crowd the plants in the row to about two feet as we must get twelve hundred pounds per acre, and we must have at least five thousand plants. We want four ounces from each plant. The leaves must be normal and shapely as only such are the delight of the buyer. To get such, both rich and abundant, we give them plenty of room between the rows, and crowd them a little in the rows. When we are ready to set our plants, we run a bull tongue through our ridge of compost and scatter commercial fertilizer about three or four hundred pounds to acre along the ridge, and mix with the soil by running the bull tongue two or three times through each ridge. When done the plants can be set.

CHAPTER V

SETTING OUT THE CROP.

Having found the right soil amply filled with vegetable mold; having plenty of good stocky plants about four inches high, well seasoned to the open air by leaving the top of the bed open for a few days and nights, and no fear of late frost, we will proceed to set out our crop. This should be done all at one time in the same field if possible, as the setting of crop at different times militates greatly against the curer, as there will be a corresponding difference in the time of ripening of the leaves. This should be avoided if possible on at least ten acres which will be the capacity of one Snow barn. The acreage designed to be cured in one barn should be all of one variety of tobacco and all set at one time and cultivated the same. This is important as will soon be found by the curer when he puts the heat on his tobacco. When ready to set we run a bull tongue back and forth in the ridges two or three times to mix the guano with the soil. This guano is to start the young plant, giving it courage, causing it to make large calculations in the first start. Not less than twenty leaves are demanded of each plant. They will not calculate so many on a low diet when young. We are expecting twelve hundred pounds of good tobacco from each acre, and have a good show for more. If we set our plants by hand we must wait for rain or we must water each plant by hand. A man goes ahead with a basket filled with plants and drops one on the ridge every two feet or twenty inches apart. A good hand behind him picks up the plant sticks his peg in the ground, and makes a hole about two inches deep; sets his plant in the hole, resets his peg and pushes the dirt against the roots of the plant, and goes on to the next. Care should be taken not to cover the bud of the plant with soil, nor press the dirt too hard at the top around the neck of the plant, as any bruising or strangling is ruin. Care should be taken to keep the rows straight, and the bud of the plant near the surface of the ground. This is called hand setting, and it is not easy work and requires

skillful, active men. Some men can set three acres in a day. If set with a Bemis transplanter the process is quite another thing; the plants are as well or better set in dry weather as in wet. The machine is hauled by two horses, carries the driver, a cask of water, and two boys, each with a basket of plants hung before him. The plants are set and watered, one row at a time. Five acres can be set in ten or twelve hours, and the work better done than is possible by hand, even with the most skillful hands. One machine costing about one hundred dollars will set the crop of a dozen planters, and in the quality of the work alone will pay its cost every year if fully employed. It will pay the planter to buy one as the setting of the crop right, and at the right time, is one of the necessary steps to insure success. With this machine the farmer chooses his own time, whereas the hand setting is often faulty. If the time for setting happens to be dry the planter is either compelled to wait for rain or water by hand, which is very tedious, and if set in very wet weather the ground is apt to form a crust around the neck of the plant, and it will not grow until the soil is loosened with the hoe.

CHAPTER VI.

WORMING AND CULTIVATING THE CROP.

The plants now being set they must be constantly cared for, as they have many enemies. If provision is not made for their protection the work of the planter will come to nothing and his labor lost. The most destructive of these enemies is known as the horn worm, which if left to himself, will utterly destroy the crop, leaving only the bare stalks and stems standing in the field. Some seasons they are worse than others, but it is never safe to neglect full preparations for their destruction which is easily done if taken in time, but very difficult and expensive if neglected; but must be done at any cost. The horn worm is hatched from eggs deposited by the Hawk moth on the top side of the leaves as he flits from plant to plant during the night, never in the day time. Like the owl he seeks dark and shady places during the day, and at the setting of the sun, he starts out in quest of his supper, which he is very anxious to get before he goes to work; like Artemus Ward who said, "If I have much wood to chop before breakfast, I always eat my breakfast first." The eggs then deposited on a leaf of tobacco will hatch and eat a hole through the leaf in about fifteen hours, and in three or four days will destroy a whole leaf and go on to the next one. It is estimated that a single fly will lay one hundred eggs in one night, and as many as five hundred eggs have been counted in the egg pouch of a single moth after being killed. Their favorite food is the honey found in the blossom of the Jamestown or Jimpson weed. They can be seen any moonlight night flying about these blossoms; to supply quantities of them and poison them is the most effectual, and by far the cheapest way to worm your tobacco. If the worms get on your tobacco there is no other way to get them off, but to go over your crop and examine every plant and pick them off by hand. If the moths are killed before they lay their eggs there will be no worms on your tobacco. Early in the season see to it that there are various thrifty clumps of Jimpson weed growing about your fields ready at the first appearance of the moth. They come

about the last of May to the middle of June in Virginia; the second crop in August. If the first crop is killed there will be but few of the second. When about fifteen days old the worms go into the ground where they remain in the pupa state or chrysalis form, from which they emerge full-fledged moths, ripe for mischief. It takes about two weeks for them to mature their eggs, after they are seen flying about. They are like pullets not ready to lay; if properly attended to at this golden time they never will lay. Let the planter get a three ounce vial; put in one-half ounce of cobalt, same of sugar; fill up with warm water, shake well, and let it stand during the day; cut a small crease in the cork. Just before sunset go about the Jimpson clumps and drop two or three small drops of the liquid in each blossom. The fly will suck the poison, and instead of laying eggs on the tobacco they will lay on the flat of their back on the ground dead. During the tobacco season of eighty-six we picked up enough dead flies to fill a hundred pound nail keg full. "An ounce of prevention is worth a pound of cure." This plan of worming tobacco is the cheapest possible way. It is the only way to prevent the leaves being eaten full of holes if the Hawk moths are numerous. If a wrapper leaf has holes in it it is classed as filler, and the price is reduced one hundred per cent. in consequence. If the planter expects to succeed he must successfully manage his crop to the end.

CHAPTER VII.

CULTIVATION CONTINUED.

To get good land, good plants, and good growth will not suffice. If he neglects to keep the worms from his crop his work goes for naught. It is the neglect of attention at the right time to all the details of the cultivation of the crop that makes the art of tobacco raising appear so much like a chance in a lottery, and success so uncertain. These points cannot be too strongly impressed upon all men who embark in tobacco growing.

It is now supposed that we have set our tobacco plants and Jimpson weeds. Our land is filled with vegetable mold, and has been plowed in winter to destroy the cut worms and bud worms, which come from the larva of the black cricket. We have not failed to subsoil our land that water from the frequent showers may settle into the ground away from the roots of the young plants in the early spring, the best method to prevent frenching; also to store the water which will come back to the plants in the form of steam when the ground gets hot in midsummer. We will now proceed to cultivate our crop and bear in mind that we are to harvest twelve hundred pounds of good tobacco from each acre planted. If our land lies flat, after we have set the plants we will take a one-horse turning plow and turn a furrow from the plants on each side, the furrows to be run about eight inches from the plants, leaving a ridge about sixteen or eighteen inches wide, with the plants in the middle of the ridge. The object of this is to drain the water from the roots of the plants when young, as often in the heavy May rains the conditions are such that the plants cannot grow and the crop is retarded. The drain formed by the process obviates the danger. A few days after the plants are set the whole crop should be looked after. A careful inspection of the whole field should be made, and every dead or sickly plant should be at once replaced by a good one, and set in such a way that there will be no mistake about its growing. Remember if there are five hundred rows in the field, and five plants are missing in each row the

aggregate loss is equal to one-half acre. At four ounces to the plant there will be a loss of eight hundred pounds of tobacco. At ten cents per pound this will amount to eighty dollars. At twenty cents, to one hundred and sixty dollars. This will be a clear loss as the land, the manure, the time in cultivation is the same. It takes a plow the same time to pass a given space whether the space is vacant or has a thrifty plant standing in it. If we look for the twelve hundred pounds we must be sure that the necessary plants are set in the field to grow the tobacco. The plants will require straightening, and the earth touched up about some of them a little, the planter must become acquainted with his crop, and see that it is starting off right. When the leaves have grown one half the size of his hand, the ridge in the middle between the rows should be thrown back into the furrow from which they were turned. This will be in about two weeks from the time of setting; if the weather is seasonable, the whole crop should be carefully gone over with the hoe; the weeds all cleaned out. The next time any cultivation is done it should be with the iron age cultivator. The surface of the ground should be level and stirred not more than three inches in depth. The tobacco is now about one foot high, the roots of the plants have started out on their journey in seach of food. They are now making their calculations as to the number of leaves they will set out to grow. The plants have been very much encouraged with three hundred pounds of fertilizer given as a starter. When they run up against the vegetable mold they will take new courage and decide at once on twenty-two leaves, all good sized and rich in oil and well favored. This will depend somewhat on the season. If dry hot weather is long continued the plant cannot assimilate all the food given it, and a less number of leaves will be the result.

CHAPTER VIII.

TOPPING AND SUCKERING.

Just here comes the rub, here is where many planters stumble. The crop may be for some reason a little backward when the time comes for topping. Its growth may be slow. The season has been backward, either too wet and cold or too hot and dry. The roots may have been standing in wet ground causing the plant to run up spindling. If the topping is done at this time it is apt to be topped too low, and when the later rains come the plant has been robbed of all possible chance to make a heavy crop of tobacco. The same planter will prime too high and top too low all at the same time, and for the same reason. The plants have made calculations to grow twenty-two leaves. They have the roots in the ground sufficient to pump the necessary sap to supply that number. The planter comes along, and compels the plant to work only on twelve leaves. The result is when the season of rain comes, the whole crop of roots being left they pump more sap into the few leaves than they can take care of; and the result is large stems and fibres and leaves called bull-faced tobacco of little value. The mistake is made in topping at the wrong end. From close observation for many years I have come to the conclusion that the only place that any plant of tobacco should ever be topped is at the bottom; save only taking off the seed bud. We well know this is not orthodox. I have been running in the face and eyes of old ideas in tobacco growing for the last seven years, and I have found many of them wrong in theory and practice, and one or two more will do no harm. It is well known that the bottom leaves on all plants are light in weight; it takes more than twice the leaf surface grown in June to weigh one pound than it does of leaves grown in August. How natural it would be then to get as many top leaves as possible; especially in a latitude where the season is ample in length to grow a full crop. Removing the sand lugs, or leaves which are likely to get spattered with grit during showers in summer, and giving the sun a chance at the roots of the plant, all testify to the utility

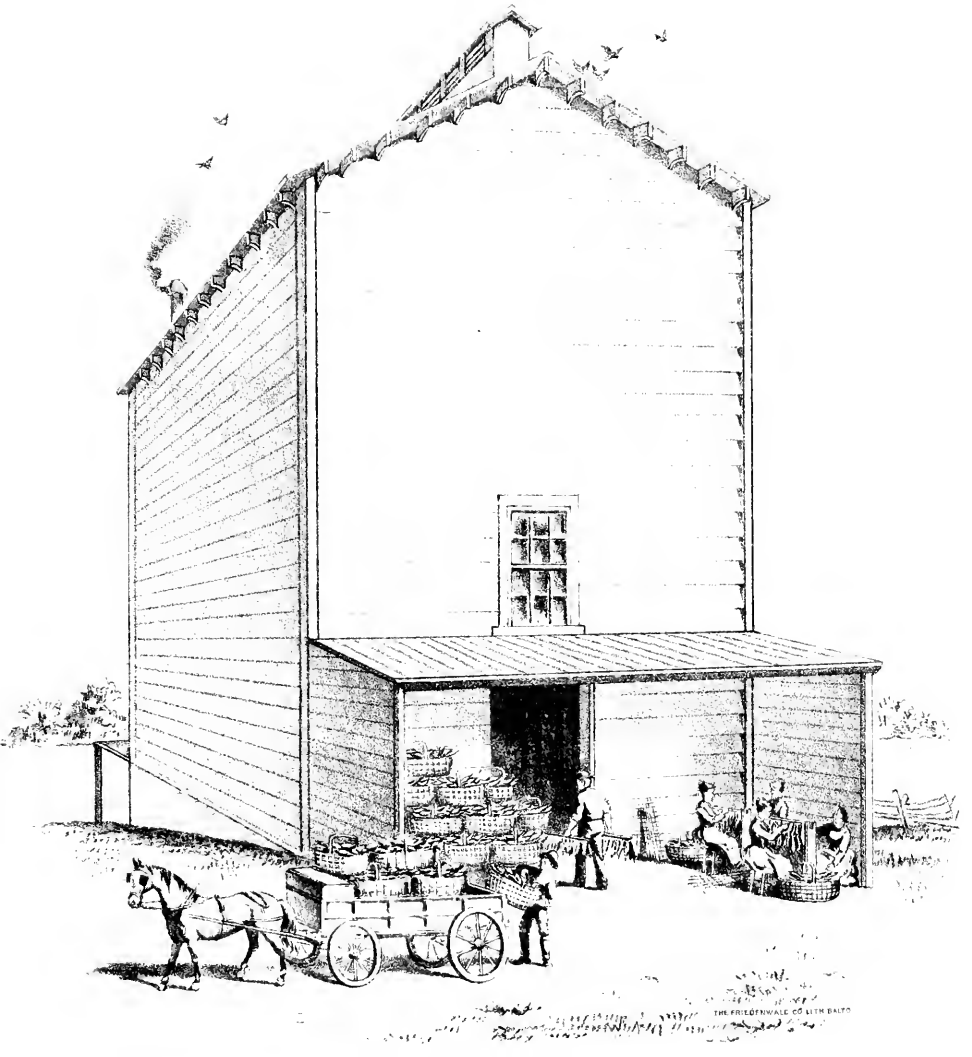
of doing all the topping at the bottom of the plant. In Georgia, South Carolina and Florida I would never under any circumstances top lower than merely take out the seed bud. Seven months before frost will mature all the leaves at the top of the tallest plant. I would see that the plant had a plenty of food to last it through the season. As the leaves were removed from the bottom of the plant the sap would have an uninterrupted flow to the leaves above. During this time that we have been looking for the flies that lay eggs on our tobacco. We do not mean by this that we have been picking worms from our tobacco, but have been killing the Hawk that lays the eggs. The grass has been kept down because there is nothing that so soon robs tobacco of its oil as grass. No man ever got a good rich waxy leaf of tobacco from a grassy field, and knowing this to be so, we keep our grass cleaned out as we are determined to grow twelve hundred pounds of good tobacco on each acre we plant; and this cannot be done if we either starve our plants or allow the grass and weeds to rob them of their food. As soon as the plant is topped, that is the seed bud is pinched out, there will start from the fork of each leaf a sucker. The plant having lost its head—its thing of beauty on which every tobacco plant seems to pride itself, it will put forth its best endeavor to get a new one. It will start a dozen heads at once, and its persistency when the plant is topped low is amazing. These suckers must be kept down at any cost, as the sap required for a rich leaf will spend itself on the suckers, and the result is leaf fibre without virtue or value. These suckers should be removed when they are but two inches long. They are easily broken then, and have done but little damage to the leaf; if left until they get tough the leaf is often injured, while the sucker is being removed; besides it has been robbing the leaf from the start. When the method of curing is by plucking the leaf and topping consequently high or no topping at the top, the plant has less inclination to put out suckers. As there is a top equal to the root the equilibrium of the plant is preserved; it has not been outraged or bisected. It has as much top as root; there are as many leaves to take up the sap as there are roots to manufacture it. It is now high time that we had our curing barn all ready, and our packing house to receive our tobacco when cured, as this is the turning point.

CHAPTER IX.

GETTING READY TO CURE.

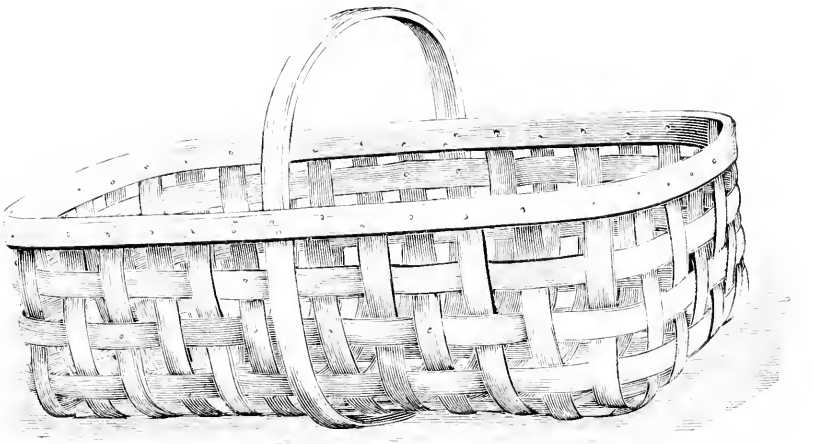
We have got our crop so far along about the middle of June; a little earlier in South Carolina and Georgia. In Virginia the middle of July will be the date of the first cures. Our barn is ready with good dry hard wood, cut three feet long and piled under the shed; about one-half cord to each curing. We have built us a store or packing house thirty feet by twenty, ten foot pitch with good floor at least one foot from the ground, weather boarded and ceiled inside; lined with paper under the ceiling, with one door and four windows, built convenient to the barn, where the tobacco can be carried from the curing barn to the packing house in baskets by hand.

About the middle of June in South Carolina, the bottom leaves on the majority of the plants will show signs of maturity; the tobacco is commencing to ripen, at the bottom only; the top leaves are not half grown at this time. These bottom leaves are light in weight and very thin, but they make the finest smokers of any leaves on the plant. It pays to save them, as the price of bright smokers will at all times be remunerative to the planter, seldom bringing less than ten cents per pound. These light early matured leaves are easily cured. There is little time and science required to yellow them; the stems are small and soon dry out. They make the choicest smoking tobacco in the world. As soon as the dark green color of the leaf changes to a pale green, it is the proof that the leaf is ripe; the growing sap has ceased to flow to the leaf. The tobacco is better at this time than it will be again. It should be removed from the stalk at once, for a state of inactivity never takes place in the life of the tobacco plant. It makes and unmakes all the same day, destruction and progression is the order of the day, and have full swing at the same hour on the two extremities of each plant. The man who thinks to get the best results from a tobacco plant and uses the stalk as a handle to cure the leaves on, reckons without his host. These ripe leaves should be



FRONT VIEW

MODERN TOBACCO BARN



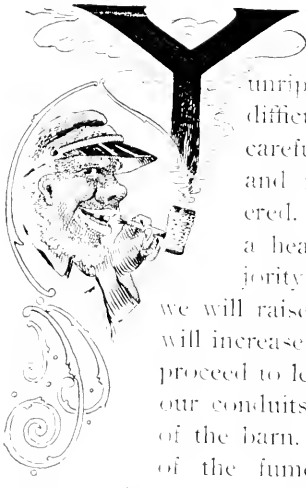
FIELD BASKET FOR GATHERING GREEN TOBACCO.

taken from the stalk, laid smoothly without injury in baskets made for the purpose, and hauled in a wagon to the curing barn. We have good reasons for removing these leaves from the plant at this particular time. The first good reason is they will bring ten cents per pound; besides the plant needs trimming at the bottom to let the sun in at the root, and give the crop a tidy look; second, if these ripe leaves are allowed to remain they will assume a deep yellow color; the sap will ferment, turn to acid and flow back to the stalk and poison the sap through its whole circulation; result, red and white blotches called frog-eye; like pimples on the face of a person with scrofula in the blood. If the planter has no time to cure them it is better to break them off and lie on the ground. After the leaves arrive at the curing barn, they should be carried under the shed, as the sun will blacken them wherever it strikes them. The women and children are now called into requisition; a class of labor never before seen about a curing barn. In fact the Snow system enables a community to cultivate and safely cure twice the quantity of tobacco than by the old way on the stalk. Just here let me remind every planter that if he expects his women and children to be of good service to him he must make preparation for their comfort; no woman or girl will sit and stick tobacco leaves on his wires with the sun shining on her head: they must be sheltered from sun and rain and have seats pro-

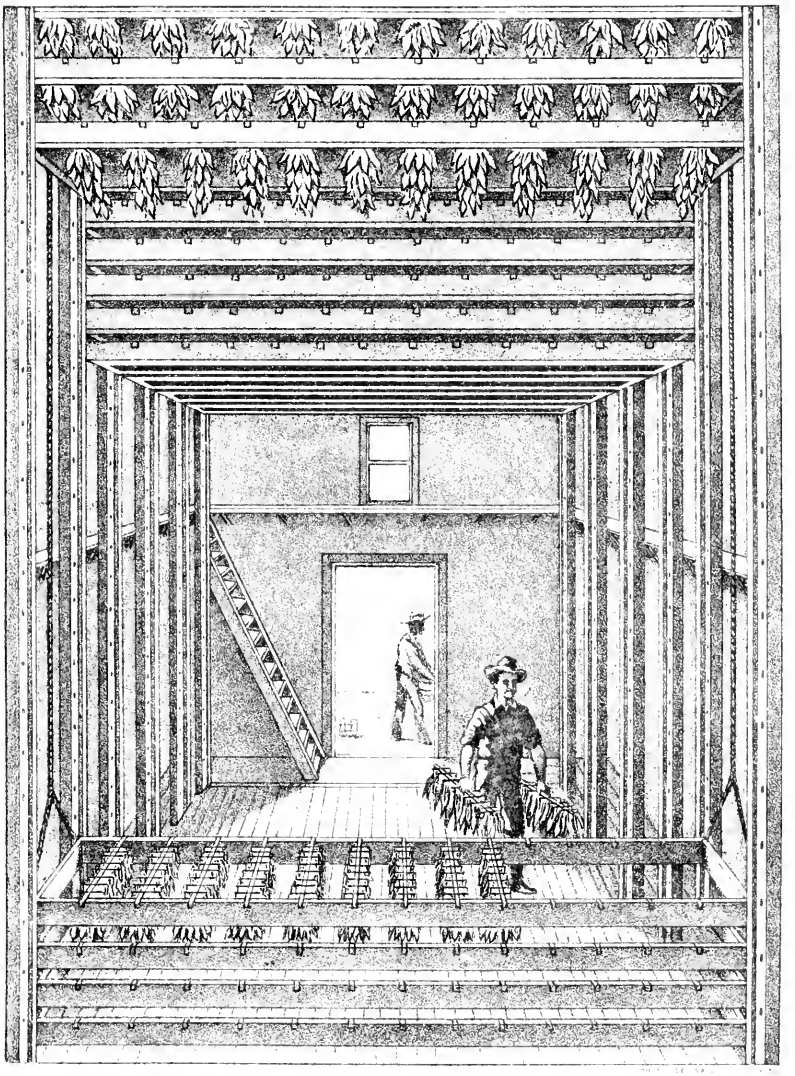
vided; and their sticks must be set firmly in frames at the right height so as not to get the arms out of a natural and easy position; this being done the planter will find his women and children always ready to help him with his crop, and a ten-year old girl the best hand on the farm at sticking tobacco. It will take about four good hands in the field gathering leaves to fill a barn in ten hours at the first priming. Many plants will not yield any leaves the first time over. The next time the leaves will be larger, and not so many can be put on the points of wire although the barn will weigh out more tobacco at one curing. At sundown the barn has been filled; the nine hundred sticks with their ten thousand points have each about eight leaves on each point. About eighty thousand leaves of tobacco in the barn, that in every system but the Snow plan have always been sacrificed to a foolish, wasteful method of curing tobacco. This has been of first primings, if we succeed in getting a good cure will bring the planter ten cents per pound, and will net one hundred dollars. So much for the product of the plant in June in Eastern North Carolina, South Carolina and Georgia. Virginia will come on later. There are doubtless good reasons why the wasteful way of curing tobacco first came into practice, and has been continued up to the present time. Thirty years ago tobacco signified a plug of twist called Cavendish or leaf suitable for its manufacture. The bottom leaves on the plant were light and trashy, and did not make a good chew; they were not wanted for any purpose as they were allowed to die on the plant, or primed off and left on the ground, and not considered as waste. When I was a boy, if men smoked, which they often did, they cut tobacco from a plug, rolled it in their hands, filled their clay pipes, lighting it with a coal of fire or if with a flint and steel with punk. Fashions have changed since then; we smoke now more tobacco than we chew; the cigarette has been invented. Killikanic, the first venture in granulated smoking tobacco, is not more than thirty-five years old. Now the little bag of smoking tobacco is seen on all sides, which with the cigars and cheroots the whole country is enveloped in a cloud of tobacco smoke, and the best and most improved tobacco for smoking of any kind is found at the bottom of the plant; hence the demand for cutters and smokers, which is likely to continue and increase. For this

reason we have filled our barn with these bottom leaves which we will now proceed to cure, and pack down in such a manner that when they have been cured and ripened, every man in the habit of smoking will pronounce them the best he ever saw, and will not be injured by using them. Having filled the barn we close all doors and windows. Shut every avenue through which the outside air can get in or the heat in the barn get out. We start a small fire in each furnace. Our object is to raise the heat to about eighty-five degrees inside of the barn; this in the month of June or July and to ninety degrees in August or September and October. If the weather is very hot we will have the thermometer four or five degrees higher inside of the barn than it is outside. We will keep the heat about eighty-five or ninety degrees until the majority of the leaves in the barn have assumed a light pea green color; it may take thirty or thirty-six hours to accomplish this.

We are now ripening our tobacco or curing it; in plain English we are getting the green or Chlorophyl out. We are also getting out the nitrate of potash, and what is of great consequence, we are sweating out the poison, bitter, pungent element, known as nicotannin. This latter element is what causes dizziness, and palpitation of the heart, also heart-burn, when excessive chewing is indulged in. The nitrates is what bites the tongue. We express these elements out of the leaf by heat and sweat, and when ready we put up our heat and open our air ducts and drive the fumes out through the top of the barn with a strong current of rarified air. In short this is the only way that tobacco should ever be cured. We want fancy color and high flavor as well. We will now proceed to give the reader the most approved color and tell him how to get it. Remember we are curing light thin tobacco easily yellowed. We have taken in from the field only such leaves as were showing signs of maturity. We picked only such leaves as are turned to a pale green. Thus we have a barn full of uniformly ripe tobacco, and can yellow it all or nearly all alike.



YES, our task will be easy when this is the case. If we get ripe and unripe leaves in the same barn we have a difficult task, for this reason we want a careful, intelligent man in the field to guide and insist that only ripe leaves be gathered. After we have kept our tobacco in a heat about ninety degrees until the majority of the leaves are a light pea green we will raise the heat to ninety-five degrees. We will increase the fires a good deal as we shall now proceed to let in a little air at the bottom, through our conduits, and open the ventilators at the top of the barn. The barn is now full of sweat, full of the fumes of nicotannin and nitrates, and we are anxious to rid the barn of a foul odor from the green tobacco. By raising the heat and forcing in the air at the base and opening the top of the barn a strong current is made, and as the barn has a natural draft, being thirty-four feet high, there is a strong uprush of air which soon drives out the sweat and the fumes of the green tobacco. So fearful is the smell and the stench so sickening that if a dog were tied with his nose over one of our ventilators we would not answer for his life fifteen minutes. The heat is kept at ninety-five degrees about two hours, then slowly pushed up to one hundred, and remain stationary three hours; then slowly go up to one hundred and five, two hours; then one hundred and eight, two hours, and then one hundred and twelve degrees, and stand three hours with all the air holes open except those on the sides near the bottom of the barn. These are not used only to let the heat down to cool the barn. Careful watch must now be had that the leaf dries clear. If the tails of the leaf curl up and dry bright the heat is all right. If there are signs of dark lines appearing there is too much heat and too much moisture in the barn and it would be advisable to drop back to one hundred and five degrees one hour; then slowly move the heat up to one hundred and twelve, and then raise one degree an hour until one hundred and twenty degrees are reached; stand at one hundred and twenty until the leaf is cured; then advance the heat



INTERIOR VIEW

MODERN TOBACCO BARN

slowly about two degrees an hour to one hundred and forty, and cure the stems hard, when every stem in the barn will snap like glass draw your fires, open all the doors and windows and ventilators; sprinkle the basement floor with water, and let the barn stand open one night. The tobacco will be ready to take out of the barn in twenty-four hours. We have now cured about one thousand pounds of July primings, or June in Georgia. These are mostly smokers. The next day they are ready to take from the barn and carry to the packing house. The same baskets are in use for emptying the barn that were used in filling it. The racks are let down; the sticks are taken from the racks, and set in a frame where the leaves are rapidly taken from the wires, and the sticks put back where they were taken from. Before the tobacco is removed from the wires it is of the highest importance that the leaf is in the right condition to handle. If too dry it will be broken and only fit for scrap or granulation; if too soft and limber it will heat and get mouldy in bulk and be likely to come out an orange instead of a lemon color, which is so much prized. This lemon color is easier got than kept; if tobacco is bulked while in too high case it is sure to go. If once gone it never returns. It is of no particular value; as an orange red on a filler is not thought to be detrimental to the chew; but it is fancy; and it is the color in cutters and wrappers that brings the prices. All trades have fancies, and the tobacco trade is as full of them as any trade known and it pays the farmer to cater to them. At this point the farmer must put his best man on guard. When the leaf is in a condition that it can be clasped in the hand at the middle and lightly squeezed without cracking the fibres but little, and the stem is hard and brittle, the tobacco will keep if closely packed with the stems outward. In this condition the bulk should be made on the floor of the packing house in a long row, with the tips of the leaves lapping each other, and the stems outward like bunching shingles. The bulks will soon settle together, and will go through a mild sweat which is beneficial; necessarily resulting in great good as we shall show further on. Let the bulks be covered with blankets or tarpaulins to keep the moisture in, and the top from bleaching, or going and coming with the changes in the weather. The bulks will require watching for the first ten days to see that they do not get unduly warm; if so they

may be rebulked or aired in the warm spots. The second curing will be on now in about eight days, and will be of the cutter type. The leaves will be larger, more uniform in size and better color, and bring nearly double the price per pound. Care should be taken now to get only ripe leaves; get only the leaves that show a pale green color. If leaves are a clear yellow color in the field break them off and leave them on the ground. The oil that was in the leaf is there no longer. The acid caused by the fermentation of the sap has destroyed the virtue of the leaf, only its bad or pungent elements are left. It has no weight or virtue as tobacco, and time and space are wasted in handling them. The curing process is practically the same as with the first cure; save this, the planter is working on a barn of tobacco if rightly handled will produce him two hundred dollars instead of one hundred, and should have his best attention from the beginning to the end.

IT is just here we wish to impress the reader with the fact that absolutely good sweet tobacco, free from the bitter, biting elements cannot be cured outside of a structure or barn that is wanting in capacity to retain the moisture until the tannin and nitrates are thoroughly sweated out of the leaf, while in the green state. The barn must also have the capacity to expel these objectionable elements out of the building, as fast as liberated, by a strong current of air which the building must be able to manufacture at the will of the curer.

This is where the Modern Barn excels all others, and tobacco absolutely perfect, cannot be cured outside of it, or some structure having its abilities.

The plants in the field have now had an average of four leaves taken from the bottoms; the sun has full action on the roots. The hoe should keep the weeds down; and July is the time to watch the young Hawk moths; they are now full in the breeding season, and in a few days will be ready for business. This is the farmer's time. Seeing no eggs on his plant is no

sign of security. It gives him no surety that he will escape them. If he has kept his Jimpson blossoms poisoned he is all right; if he has not he may be all wrong. The suckers must be watched and kept pinched off, or the crop will not weigh out twelve hundred pounds per acre. This second barn will be cutters; the first was smokers. If they are packed separate, the planter will find his crop practically graded. There will be three or four more curings on these same plants; in Georgia, perhaps more, if the sucker crop comes in well. The third curing will be a mixed barn of cutters and wrappers, and should be about fourteen hundred pounds in weight, and be worth about two hundred and fifty dollars. The curing will require about twenty hours more time; the stems are larger, the leaf heavier, and the heat must be run a little slower, as there is more sugar in the leaf. If a light yellow is obtained, the yellowing process will require more time.

CHAPTER X.

CURING FILLERS MAHOGANY.

We have one more barn of tobacco to cure; if it is the last it is by no means the least. It is the part of the crop that largely gives character to the whole crop. It is the filler for plug or chewing tobacco; the tip leaves in the stalk cure system. These are in great part harvested green; the exigencies often arising as the curing season compels this. Will my crop lose more at the bottom than it will gain at the top, if I let it stand another week is the burning question with the stalk curers as the season comes near at hand. Will there be frost is another question which hurries the late planting into the curing barn. These are cut and carried to the curing barn on the stalk where the curer has to wrestle with the problem of curing ripe leaves, over-ripe leaves and green leaves all in the same barn, and the same heat. This is as difficult as it would be for a man to ride two horses at the same time; one of which wanted to strike a two-forty gait and the other a four-twenty gait, the rider is in a strained condition, and is likely to end his journey on foot. This condition is the prime cause of the two hundred millions pounds of tobacco denominated nondescript, trash is the proper term. With the Snow system, we let these tip leaves get their full growth and get fully ripe before we gather them: they have the full power of the stalk to feed them. They get very rich in a short time. Like a sow with ten pigs, if five are weaned, the other five get more milk. If the rains are abundant they will keep green after they are fully ripe. The planter can always know when they are fully ripe by the grain on the leaf, and by the absence of the clammy hairs which are always seen on an unripe tobacco leaf. If there is no danger of frost nor signs of little red spots on the face of the leaf, it is not best to hurry the curing; but if the red spots have appeared, it is a sure sign of decay, and the curing should commence at once. Fully ripe tobacco is our motto, with as much fat in the leaf as possible. We are now working for some choice filler, and expect

our barn will weigh out two thousand pounds at least. If they are not turning yellow on the hill we will know that they are nevertheless rich in oil of tobacco. It will take us longer to cure them, but we will be well paid for our time. When we are ready to cure, we will crowd our barn full of these green leaves, and put in one fire to warm the barn to 90 degrees. Let it hang two days. Afterwards, we will keep the heat on about thirty-six hours at ninety degrees, and gradually raise the heat about one degree an hour with the conduits and ventilators open until we have reached one hundred and thirty-five degrees and stand there until the leaf is cured, and the stems still soft and not cured. Now draw the fires and let the barn stand closed up tight top and bottom, and let it remain three or four days; the sap in the stem will run back into the leaf. Then rekindle the fires with the ventilators open, and start the heat slowly about one degree an hour until one hundred and thirty-five degrees are again reached; and remain there until the stems are all cured dry. The first stage of curing is finished. The second stage will begin just where the first left off. If the color is green on the leaf when the curing is finished have no fears. We have only commenced the curing of this class of tobacco. After the tobacco has come in case, with the feather of the leaf soft and the stem hard, we will remove the leaf from the barn, and bulk it in a close compact body, and cover it up close with blankets and not disturb it until the following May or June, when we will market some of the richest mahogany fillers and wrappers ever seen on any market, and never fail. The heat in the curing barn must never be allowed higher than one hundred and forty degrees. This leaves the vegetable albumen in perfect condition, and the ripening process is carried on in the bulk. The excess of sugar in the leaf prevents the bright lemon color in the curing barn; but in the bulk this saccharine matter forms itself into small polka dots and the spotted mahogany leaf so much prized by the manufacturer of choice chewing stock is the unvarying result. In Georgia, and sections with long seasons, a sucker or two can be turned out and some choice smokers can be grown that will materially add to the value of the crop. These mahogany fillers and wrappers have been lying in bulk from the day they were cured; they were packed down in the month of September when the weather was warm; they

went through a sweat while lying in bulk; this sweat was a species of fermentation; a condition necessary for tobacco to pass through before it is safe to either put in hogsheads, or to manufacture and put in boxes.

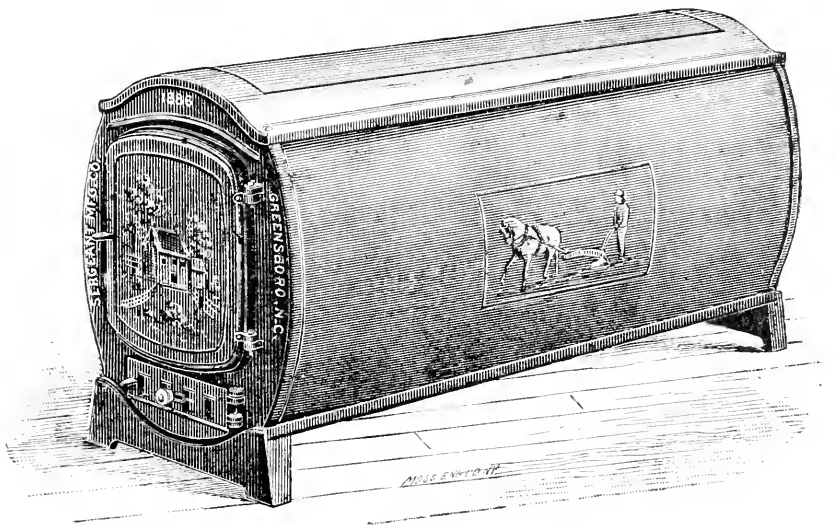
If the heat is run above 140 degrees, on rich waxy leaves and they are bulked in a moist condition they are inclined to stick together, but if cured so as it leaves the wax in the cells capped over, and not cooked out, the bulk will remain for years without sticking together or other injury.

It is now safe to pass through the month of May. The May sweat comes to it in proper form and all fullness in the month of October. If the color had been right, it would have been ready and perfectly safe to have worked it into plug in the winter, January following the cure. We cured it slow, and at a low temperature in order to retain all the albuminoids and essential oils in their most perfect condition. These must not be cooked or hardened by excessive heat. The oils of tobacco will preserve the leaf and the manufactured goods better than any substitute; nothing can ever take and fill its place. The attempt is often made to find some commodity to replace the virtue that the stalk cure process, with two hundred degrees of heat has taken from the leaf; but up to date they stop at the molasses barrel. By the curing and fermenting in bulk the large, costly prize houses are not needed. They are worse than useless, as tobacco remains crude and unfermented until it is taken down; and while it hangs in the open air is so much time lost.

CHAPTER XI.

BULKING AFTER CURING.

To the manufacturer of plug or smoking tobacco or cigars the proper and immediate bulking and fermenting is of the highest importance, as it puts the manufacturer in possession of seasoned fermented goods one year ahead of the usual time; and being cured separate from the stalk the leaf possesses a flavor that cannot be had from stalk cured leaf.

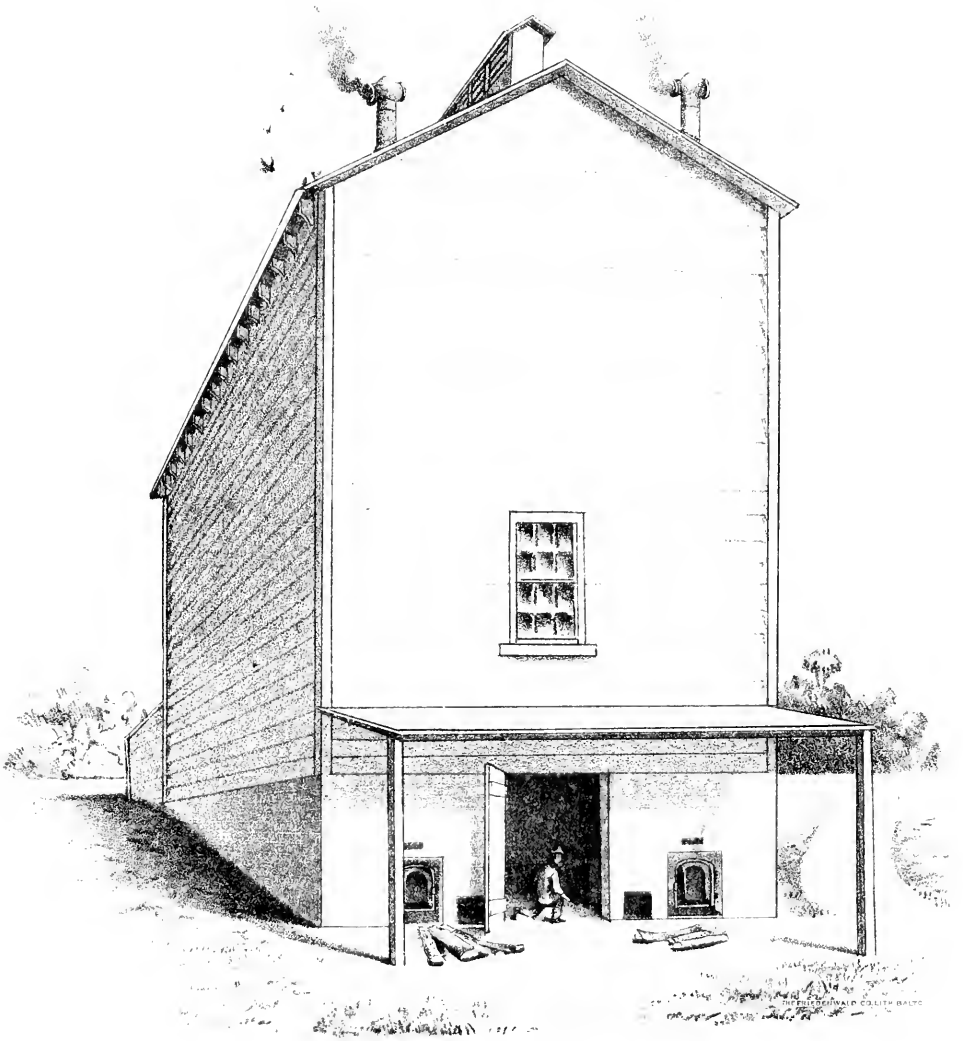


STOVE. MODERN TOBACCO BARN.

Two planters may grow tobacco in the same field, of the same variety and practically the same method of cultivation; one man will sell at fifty cents per pound and the other at five cents per pound; the sale perhaps on the same floor and to the same parties the same day. This difference is to be seen daily on every loose leaf market in the country.

This difference in value is caused mainly in the time and manner of curing. How important then that the planter understands his business when he comes to gather his crop. If the planter cuts his crop and cures it on the stalk he hazards everything on a single throw of the die; he has but one chance at the

cure; his leaves in every stage of maturity are cured in the same barn and in the same heat. If his crop has been overtaken with a severe drought late in the season the bottom leaves have ripened early and the crop is composed largely of trash lugs and half grown green tips. If the season is wet the large sappy stalk takes virtue from the leaf, and poor color and a leaf void of virtue is the rule and little money for the product. There is no escaping these results with the stalk curing plan; they are the inevitable results of the faulty method and will continue so long as it is practiced. With tobacco growers a lack of knowledge is a very expensive situation, over-ripe trash lugs, and under-ripe green tips are not the legitimate product of the plant. They are the price men pay for not knowing how, when they embark in the industry. This mass of nondescript aggregates more than one third of our annual crop. It is the fearful price men are paying for their reverence for the customs of their daddies. Prejudice is strong in the human mind; we are actuated by it when we little think. It is a kind of knowledge men obtain without effort; no time is lost in getting it, hence its abundance. Two hundred million pounds of cheap trash lugs and green tips is the price the planters annually pay for their reverence for the old custom of curing on the stalk. A traveler passing a field saw a man plowing heavy land with a diminutive jackass. He advised the plowman to trade his jack for a horse that would plow his land deeper and faster. To this suggestion the plowman replied that "his father did his plowing that way, and a jackass was good enough for him." The loss in weight and value of the crop by wrong methods of curing is simply enormous. The test made by the North Carolina experiment station during the season of ninety-one at Oxford, North Carolina, settles the question fully. While it made no new discovery, it was the first authoritative statement of the facts, and brought to notice a subject of great moment; very much to the surprise of the planting industry, and in fact to the world of tobacco. They were not prepared to believe that a wrong method of curing was destructive of 40 per cent. of the actual value of every acre of tobacco they grow; yet this is the fact revealed; and no possible amount of explanation can make a better showing for the wasteful way now in practice. Below we give the report of the officials of the North Carolina experiment station made in January, ninety-two.



REAR VIEW

MODERN TOBACCO BARN

CHAPTER XII.

EXPERIMENTS SHOWING THE COMPARATIVE VALUE OF CURING TOBACCO UPON THE STALK, AND THE SNOW WIRE LEAF CURE.

The comparative test instituted near Oxford, N. C., to show the relative value between the common method of curing tobacco upon the stalk, and the new Snow method of curing the leaf as it ripens has been completed by the North Carolina Agricultural Experiment Station. The following final results are given as matters of interest in advance of their publication in the Station bulletin, where the detailed progress of the test, and the methods adopted to insure accuracy will be found. One acre of growing tobacco was carefully measured off in a field where the plants were as identical as possible in size and hardiness. One-half of the acre was cured by the Snow process, and the other half by the common method of stalk curing. Absolute impartiality was observed, strictest precautions were taken to prevent any one or anything influencing the result of their cure. The tobacco was graded by an experienced grader, and five experts valued the piles as they lay on the floor (independently of each other) without any knowledge of the origin of each pile. The values were obtained by multiplying the weight of each pile by the average of the five values placed upon it. Subsequent sale on the floor of the Farmer's Alliances warehouse in Oxford confirmed very closely the correctness of their averages. The weights and values are as follows:

For the half acre the common stalk cure method gave 326 lbs., valued at $38.30, an average of $11.74 per hundred pounds. For the other half acre, the Snow wire cure method gave 454 pounds valued at $63.14, an average of $13.96 per hundred pounds. The cost of labor and the method must be deducted from these figures. The results will then be for the stalk cure total value at $36.22; and for the Snow wire cure total value $57.96, a difference in favor of the Snow wire cure of $20.75 per half acre, or $41.50 per one acre.

The experiment was made in the interest of agriculture solely. If the existing method of curing tobacco can be improved, and a better one substituted our tobacco growers should know it. It is assuredly the duty of the experiment station to ascertain this fact, and it became known.—H. B. Battle, Director, Experiment Station, Raleigh, N. C.

Let the planter take one hundred pounds of good rich tobacco leaves cured in a heat no greater than one hundred and forty degrees; weigh carefully and cover close in a box where the air cannot penetrate the bulk; at the end of four months, if taken up and weighed, it will show a gain of five pounds. If the same amount of good tobacco cured on the stalk at about one hundred and eighty degrees; stripped and weighed and hung up in a prize house in the ordinary way; if weighed at the end of four months will show a loss of ten pounds. Just here is to be found a distinction very destructive to profits in manufacture. The difference between hanging and bulking is exactly fifteen pounds in one hundred pounds of tobacco. We now call attention to the short sketch given below which makes interesting reading when a man is looking for facts:

We, G. T. Walker, of the county of Rockingham and State of North Carolina, and T. C. Blalock, of Greenville county and State of North Carolina, hereby certify that on the nineteenth day of September, 1891, did cut thirty plants of tobacco to make an honest test, which is the better way of curing tobacco on the Snow process or the old process.

We cut plants of uniform size and plucked just half the leaves alternatively, and the difference in the weight was just four ounces. There were two hundred and fifty-eight leaves on the thirty plants, one hundred and twenty-nine were cured by the Snow process, and weighed three pounds and fourteen and one-half ounces; and one hundred and twenty-nine were cured on the stalk, and weighed three pounds, ten and one-half ounces, September 24, 1891.

G. T. WALKER,
T. L. BLALOCK.

Sworn and subscribed before me this 24th day of September, 1891, at Oxford, Granville county, North Carolina,

S. V. ELLIS,
Justice of the Peace.

Mr. G. T. Walker is a prominent farmer in Rockingham county; and Mr. Blalock is assistant to Dr. Battle in the State Agricultural Experiment Station.

The curing was done in the Snow barn, the tobacco hanging side by side in the same heat. For further proof in the same direction read Mr. W. O. Jackson's test which shows how little excuse the farmers have for the belief that is so prevalent among them that the stalk feeds the leaf during the curing process; when the fact remains without contradiction that the leaf is spoiled or robbed of its virtue; its essential oils equal to six pounds to every one hundred pounds cured on the stalk.

Mr. W. O. Jackson's testimony is given below:

Culler, Stokes County, N. C., January 8.

Mr. W. H. Snow,

My brother handed me a letter from you, of which I find you have been misinformed. It was I that made the test in curing leaves of tobacco on wires and on the stalk last fall. I selected well matured plants of even number of leaves. I took off half of the leaves on a stalk—sometimes taking off the south side of the stalk, and sometimes taking off the north side—when I would take the top leaf; next time would leave top leaf on stalk; with its half number of leaves put on split stick; put the leaves on 4½ Snow's Wire Stick; cured them in log barn in same tier, side by side. First test pulled off and weighed. Leaves cured on wires being 54 in number, weighed over one-fourth pound more than same number cured on stalk. The leaves cured on the stalk appeared (next to the stalk) dead and papery, and of a dark or bluish color, which warehousemen and tobacco dealers pronounce unripe tobacco, while those cured on wires are not so, but appear more lively and the color good to end of the stem.

Yours truly,
W. O. JACKSON.

If this six pounds in one hundred be added to the fifteen pounds as the difference between hanging up or bulking down, it will show twenty-one pounds of very much better tobacco. This, in itself, is a profit greater than most men are making on their manufactured goods; these are cold facts which plug men will do well to examine.

We captured this nugget in Philosophy six years ago, in 1886, with a pair of grocers' scales; and have been proclaiming it while the numerous experiment stations with their costly laboratories and numerous aids were hesitating and looking wise. They do not like to admit a stubborn fact of so much importance. They have been stumbling headlong over the truth during the last thirty years and have not been able to locate it. This experiment was made with the most confident expectation that the stalk cure end of this acre of tobacco would be the heaviest; the advice of the old farmers was freely given; the result was the cause of great chagrin. The loss of forty-one dollars and fifty cents on each acre of tobacco planted in the stalks comes nearly up to the price obtained per acre as shown by the eleventh census; namely fifty-one dollars and twenty-five cents per acre, eight dollars and seventy-five cents short of one hundred per cent. during the last ten years.

These figures show a very urgent demand for a change in the method of handling the crop. This change is likely to take place slowly but surely. As the location changes the method of curing will change; the center of the tobacco industry will change likewise. Tobacco growing is no longer as remunerative as formerly, either in Virginia or North Carolina. The reasons are obvious. Tobacco is more generally grown over a greater portion of the country; the Virginia and North Carolina soil has had the tobacco taken out of it; their facilities for producing a good crop are growing less every year; their methods of cultivation and curing are out of date and not in touch with the times. New men, new soil, and new and improved methods will gradually crowd the old planters out. The masses who use tobacco will demand and obtain a more wholesome and pleasanter tobacco. They will obtain it from the new territories with the new ideas. The trend of tobacco is not westward or northward, but surely southward; where a longer season and more sunshine can be had, and more pounds per acre of milder, sweeter tobacco of every description and for all purposes can be obtained. The wasteful, barbarous method of cure will not follow the planting to the south to any extent. Some will come from Virginia and bring their notions with them; but they will soon find their bitter tobacco is not wanted; there will be shown them a better way.

CHAPTER XIII.

BAD EFFECTS OF CURING ON THE STALK.

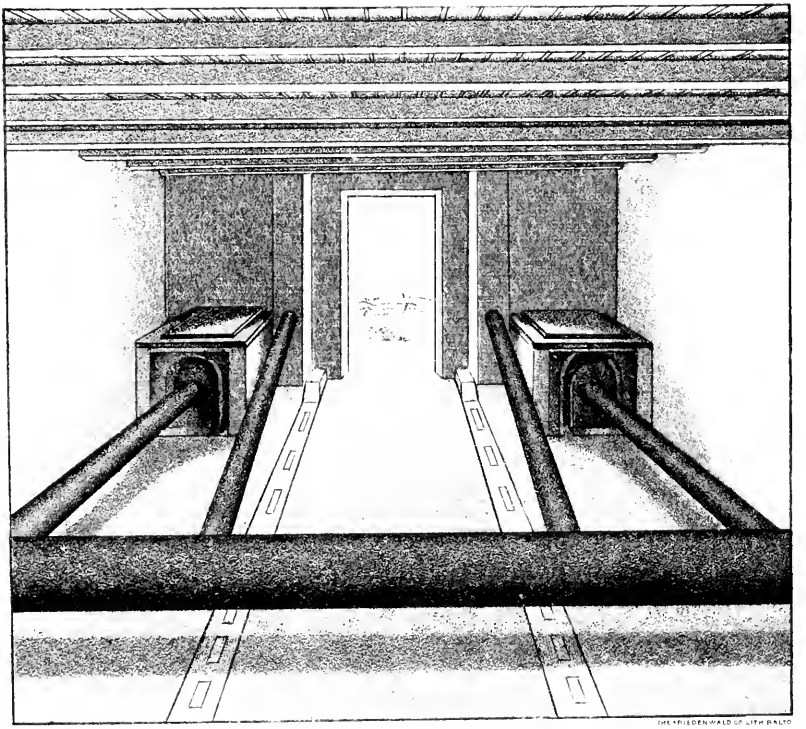
The same variety from the same field, cured the same day has a marked difference both in taste and smell. There is not the pungent bitterness, found in all new cured tobacco, when cured on the stalk. This biting element is so pronounced that tobacco is considered unfit for use until two years old. Time must be given the leaf to discharge and neutralize the poison contained in the nitrates and nicotannin which it takes up in some form from the stalk, before it is fit for use. These elements must be mellowed; a chemical change must take place; hence about two years time is taken to get rid of what the stalk is foolishly allowed to put in. An element not belonging to the leaf, but to the stalk only, and in every way highly objectionable. This is one of the strong reasons why we remove our leaves from the stalk before curing. It is to the thorough sweating of the leaf in the green state that we attribute the excellence of the tobacco cured in the Snow barn. It is not enough that it is cured separate from the stalk. It must be thoroughly sweated while in the green state. The Snow barn is built with this object strongly in view. The old log barn has not this important requisite; neither has it the power under all circumstances to relieve itself of a sweat, if by any chance it gets one. Just what the chemical action is on the leaf that takes place at this sweating period is questionable; the result is what we are now dealing with. At the time this sweating is taking place the barn is filled with offensive odors which the heat seems to express from the leaves. The process of expelling these odors continues so long as there is any sweat or sap in either leaf or stem. The air in the room is completely changed every five minutes during three days with the heat about one hundred and thirty degrees average. It is plain to see how we get sweet, wholesome tobacco, freer from all offensive properties than can be obtained from any other known way. The sweating has another good effect on the leaf. It has a strong tendency to strengthen the fibre in wrapper leaves for

plug and cigars. This is a great advantage. It has also a marked tendency to contract the stems and fibres as they appear less prominent in the leaf so cured than in leaf cured on the stalk in the open barn. It is a fact well established that a common hogshead will hold two hundred pounds more leaf under the same pressure of wire cure than stalk cure; this owing solely to the difference in the size of the stems and fibres, and to the fact that the pores of the wire stem are filled with wax solid; while the stem of the stalk cured leaf is porous like dry honeycomb. Another proof of our theory that the leaf is robbed of its weight while curing if attached to the stalk. This drainage of virtue is greater by the slow process by air cure than when rapidly cured by artificial heat.

If the loss of money was the only evil it might be tolerated; but unfortunately the greater evil is yet to come. This mass of stuff is all used in some form by the devotees of the weed; not in its normal state, but doctored with every conceivable nostrum; the unripe pungent flavor of the green tip leaves must be disguised. The leaf was harvested while the albumen was in the matrix. Instead of the essential oils we have an acid with a biting flavor without a name. The wax cells that were to contain the Empyrean oil was in the embryo. All these requisites of perfect tobacco would have been there in perfect form if they had been allowed time; but the exigencies of the case demanded immediate action. The bottom of the plant was in a worse condition, if possible, than the top. The bottom was rotting. What else to do but cut the plant and save a part of the leaves right, and do the best we can with the rest?

The over ripe stuff is little else than leaf fibre; the oil has been there, every requisite of perfect tobacco has been there; but alas the laggard husbandman was not there. The oil of tobacco has gone back into the soil by capillary action, leaving the dry bones of the leaf without substance or value; a sort of sponge to absorb and hold any substitute the manipulator sees fit to add; the names of which are legion.

To the poison inherent in this mass of unripe tobacco and its concomitants, can be traced the unpleasant odor of the bad cigar; the bad taste in the mouth after smoking either pipe or cigar; the dizziness in the head, and weakening of the eyesight; frequent heart-burn, palpitation of the heart and kindred

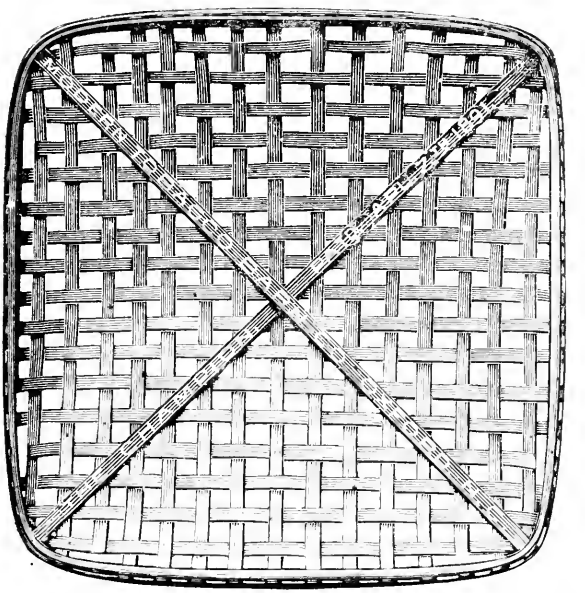


INTERIOR OF BASEMENT

MODERN TOBACCO BARN

ailments. Good ripe, well cured tobacco, unless used to excess, will not produce the evils here named. The drying of the leaf on the stalk is harmful in many ways: the real virtue of the leaf is extracted; the body draws sustenance from the extremities at the time of dissolution; and the vicious elements of the poison, filthy stalk are imparted to the leaf by the volatile exhalations from the stalk. This is apparent in the marked difference well known to exist in every case where the leaf is cured off the stalk when contrasted with the leaf cured on the stalk.

We have up to this time cured four or five barns of tobacco, taking from each plant as many leaves as we found in the right condition to cure each time we filled our barn. Our primings, our cutters and wrappers have been cured and are safely housed, and are going through the second stage of curing so important to the manufacturer, and the man who expects to receive pleasure by either smoking or chewing the product.



THE CELEBRATED CHAMPION WAREHOUSE BASKET.

GRADING FOR MARKET.

The grading of tobacco for market is very important and not easily learned; it is said that "each buyer pays for the bulk by

judging of the poorest leaf in the pile," if this is the case, it is very important that it be properly graded, so that the good rich and sound leaves should be bulked together, and the poor leaves in another pile separate.

A leaf with good color, size, and rich, with two or three worm holes in it is classed as a filler, and the price varies from 6 and 8 cents to 75 cents.

The large light bright leaf is a cutter, while a leaf of the same general appearance, if heavy, or good body, goes as a first class wrapper, the difference in price is as 20 to 60. The length of the leaves must be looked to as long leaf only goes into first grade wrappers. The leaves of good texture and thickness, but short, should go by themselves, as second grade wrappers, and sell for about one-half the price of long wrappers.

Smokers and cutters should have the same care in sorting as the wrappers, and should be tied into bundles of about ten leaves, with the stems nicely rolled and covered with a good tough leaf.

Grading is an art that pays the planter to study and is only learned by watching an expert, it cannot be handled when dry, and the "just right" condition when put on the market is often of the highest importance to the grower.

The small and broken leaves are graded as bright or dark smokers—if light—but if rich and waxy, are classed as fillers, and the two grades embrace fully one-half of the crop.

CHAPTER XIV.

CIGAR LEAF.

"LITTLE DUTCH."

It is believed that tobacco can be grown with a good degree of success in a greater range of latitude than any crop of any commercial value; but when we get the best results from the Virginia plug stock, we doubt the propriety of planting it farther north than the thirty-sixth parallel.

It is a plant that requires sunshine, and if the plant does its best under the best condition, it must have immunity from frost at least six months in the growing. The plant thrives well in sections north of thirty-six degrees, but it must be pruned to suit the season. The best results are not obtained in the cultivation. The average per acre in Virginia falls below six hundred pounds; while twelve hundred pounds is as easily grown in South Carolina and Georgia, where the season is longer, and the right method of cure is adopted. It is plain to see that the cultivation of tobacco will gradually move in the direction where the best results can be obtained. Ten years will see South Carolina and Georgia the center of the tobacco growing district of the United States. With the change in the location will come the change in the method of cultivation and curing. Our foreign trade will be greatly increased by reason of having a superior tobacco to sell, which will come with change of climate and manner of growing and curing. Let Georgia and South Carolina take hold of their opportunity; no fear for the result. If failure will come, it will come through your own action or lack of faith. Don't think you can succeed by adopting the Virginia methods of either cultivating or curing. The Virginian did the best he could with his system and climate. You have a better climate; but with the Virginia system it is of no use to you. The tobacco plant

will bring all its propensities and peculiarities when it is transferred to South Carolina and Georgia. It will grow green leaves on the top of the plant, and at the same time ripen them at the bottom, and if the planter is not prepared to cure them when they get ripe he will miss curing them at all; and will also miss the sale of about one-half of the legitimate product of his crop; he will also lose the part of his crop that is soon to be as highly prized as any part of it; namely the light bright, mild smokers, than which no part of the crop will be more sought for, when the trades and people learn their value.

We have said in a former chapter that we believed in ten years the center of the tobacco industry would be near Columbia, South Carolina. The bulk of the cigar leaf will be grown in South Georgia and Florida. The same reasons hold good with cigar leaf as with Virginia leaf. The seasons are long and the plant has ample time to mature its entire product from bottom to top; this it cannot do in shorter and colder seasons; besides the power of the sun is exerted to little purpose on the plant during a season too short to produce a rich leaf from bottom to top of the plants. The island of Cuba has long and easily held the honor of producing the best cigar in the world; no part of the world questions her supremacy. The same variety planted in Pennsylvania does not come up to the native Cuban leaf. And yet her soil is no better than that of Florida, South Georgia or Louisiana. It is her length of season, her long hours of tropical sunshine that gives to her tobacco its unrivalled excellence. Florida, while not quite so far south has all the benefits of sea air and a humid atmosphere, which some claim as the prime cause of the superiority of Cuban tobacco. The average per acre will be much greater if the leaf cure is adopted. It is safe to assume that Florida, South Georgia and Louisiana will grow cigar leaf as good as can be grown in the world If their climate is lacking a little in producing a perfect cigar leaf, the deficiency can be more than supplied with the right method of curing. We have no hesitancy in saying that Havana seed leaf grown in Georgia and cured in the Snow barn will make a cigar that will satisfy more men than Cuban leaf cured as it is in the air in Cuba. A pleasant flavor, a toughness of fibre, an oily glossy appearance to the wrapper is uniformly obtained when the leaf has been plucked from the stalk and thoroughly sweated in the green

state, the bitter element driven out of it. This method of cure would greatly add to the good qualities of Cuba's best leaf if the whole crop was harvested when ripe. The trash lugs that have been allowed to remain on the plant until they are over-ripe, have lost the essential oils; the virtue of the leaf has gone to the ground by capillary action, the fibre of the leaf is left, and with it a bitter residue of the albumen. The leaf is harvested and used as a filler for cigars; an unsavory cigar is the result. The smoke is as blue and as hard on the eye and mouth as smoke from burning wood, and the cigar has a very short life, and is soon burned out.

If the plant is cut with green tips there are more fillers; this time not over-ripe, but unripe. We always know cigars made of this kind of filler; it takes longer to smoke them and all day to get the bad taste out of your mouth. This kind of cigar furnishes the long stubs thrown into the spittoons and gutters, and causes a man to swear off on cigars, and buy a pipe which he smokes as long as the bad taste from the cigar remains in his mouth.

The bane of the industry is the millions of pounds of nondescript trash, over-ripe lugs, and under-ripe top leaves; stuff that crowds every market; it goes to swell the stock always on hand in the market reports, grown and handled at a loss. It costs about eight cents to grow and handle it, and it sells at about four cents average. This stuff will largely disappear with the leaf cure. The mystery is solved as soon as the planter gathers his ripe leaves only and cures them. This waste cannot be avoided; it is a condition inseparable from the present process of curing on the stalk. No amount of science or attention can secure a crop without these dead and green leaves at top and bottom of each plant. No man ever saw a plant of tobacco with all the leaves on it equally ripe. This is true of cigar leaf, and true of Virginia leaf, no matter how or where grown. There is a disposition to utilize all the leaves grown, and as only about one-third of the legitimate product of each plant is in a ripe state at the same time it is easy to see where all the bad cigars come from. The over-ripe leaf has lost its oil, its aroma is not on hand. The smoker gets no pleasure for his money when he buys this kind of cigar; but when the leaf cure is adopted, the whole crop is harvested leaf by leaf as fast as they ripen. No over-ripe leaves,

no green leaves, no pole burn on the best wrapper leaves, no stripping in midwinter. While others are handling their crop the man with the Snow barn is handling his money, full value for every leaf grown in his fields, and quick returns. His crop was harvested in the best condition, and cured in its best form to make high grade cigars from each leaf. No process of harvesting tobacco is ever likely to do more than this.

The method of curing the cigar leaf is simple and inexpensive, the seal-skin brown color is given to the leaf in about five days from the field, a light brick color or a dark brick color, or any shade of brown or red the curer chooses, it is easier to get the brown cigar color and keep it, than to get and keep the lemon yellow. When the curing is done the crop is safe and absolutely in the curer's keeping, he has no fear of pole burn, nor is he stripping his tobacco in midwinter. The crop is placed in bulk, direct from the curing barn, where it is allowed to ripen the albumen and mellows the nitrates, and in ninety days from the field the whole crop is in the hands of the cigar manufacturer when good cigars can be made from every leaf grown in the field, as none but just ripe leaves went into the curing barn.

CHAPTER XV.

WHITE VEIN.

There is the white vein in cigar leaf which sadly puzzles the leaf dealer, and detracts from the profits of the man who grows the crop. The remedy is easy, and the cure as certain as that sunset will follow sunrise. Stop drying your leaves on the stalk, and instead of the oil being extracted from the veins, it will remain in them, and give the fibres a dark color, and the leaf more weight, and the cigar a much higher flavor, as the oil is the foundation of all these essentials. It is plain to see the importance of this element; don't waste it; it leads the manufacturer into all kinds of difficulties, and it means a lot of poor cigars where there might be good ones from the same crop. When a tobacco plant has been severed from its roots and hung up to dry the first sign of trouble is seen at the tip of the topmost leaf. The point begins to wilt in a warm day in less than ten minutes after the cutting. At the moment of cutting, the roots of the plant were actively pumping sap to these top leaves through the sap passages or pores of the stalk which at once feel the loss of this life-giving force. A reaction immediately takes place. The stalk being the largest and strongest part of the plant immediately commences to draw sustenance from the weaker parts or its extremities. "The points of the leaves wilt, the extremities get lifeless"; this is true and perfectly natural in both animal and vegetable life. The wilting of the leaf is not caused so much by evaporation of the sap through the pores of the leaf as by the absorption of the sap from the leaf to the stalk. This absorption takes place through the stem and veins of the leaf. When the stalks are large this drainage is correspondingly so; and during the slow process of drying out the stalks and stems in the tobacco sheds these veins and fibres are left with little substance in the shape of oil of tobacco in them. They are sucked dry; they become woody and hard, and as the only substance that can give them any color is taken from them they become white, and when they are subjected to the sweating process the

oil which is in the feather of the leaf cannot penetrate them, so they remain white. Such leaf will do for fillers and binders, but look bad on the outside of a cigar. Variety and soil have something to do with the size and woody texture of these veins, but the chief cause is the wrong method of curing. The only element that can keep these veins soft and give them a dark color is extracted from them by a method of curing that has nothing to recommend it but its age. Let not the planter think there is anything new or strange in this philosophy; it is as old as the hills and like the statutes of Medes and Persians, they alter not. Every blade of grass, every stalk of corn, every plant of tobacco, every herb with its root in the soil, every man or animal or creeping thing on the face of the earth is amenable to the fixed law, that the body draws sustenance from its extremities at the time of dissolution. When the tobacco industry shall lay hold of this self-evident truth they will be well rid of an incubus that now hangs like a mill-stone about their necks. Six pounds of the oil will be added to every one hundred pounds grown: the trash will disappear entirely from the crop. Its presence is a condition and not a necessity; the white vein will disappear when the curing is done right. The bitter unsavory cigar will be displaced with a good cigar at the same price now charged for the poor one. The crop may be grown right, the curing is like the cooking of the wheat crop or corn or potato crop, if the cooks do not understand their business, then sodden cakes are the result for the table. It is of quite as much importance to the crop to cure it as to grow it. All tobacco leaves when well ripened in the field are greatly improved in flavor by being subjected to a heat that will divest the gluten or albuminoids of the leaf of a raw green flavor that is peculiar to air cured tobacco and constitutes the chief objection to air cure or sun cure chewing tobacco.

If you would have the best cigar possible to obtain, strip the leaves from the growing plant when they are ripe in their best possible condition and cure them in three or four days artificial heat, instead of two or three months by cold air drying. This has the same effect on a leaf of tobacco as the artificial and rapid evaporation has on fruit. The flavor of the fruit is caught and held in it. The heat closes and seals up the pores; the virtue is all retained, while the process of drying by air allows the flavor

to escape. The glucose or diastase is not retained in its best form, it escapes through the pores of the fruit during a long slow process of drying, which is prevented if the heat is applied at once sufficient to arrest the evaporation of the virtue and let only the water escape. This is the reason that the evaporated fruit sells at twelve and one-half cents per pound when air dried fruit only three or four cents and is a drug on the market at any price. It has taken about fifteen years to convince the public of this fact, although it was as plain fifteen years ago as it is to-day. The time is not far distant when tobacco dried in the air in the ordinary way will not be used for cigars for the same reason. The choice elements have been drawn out of the leaf by the power of the stalk, as the greater shall draw from the lesser is a well established law in botany. The best elements of the leaves are not retained when they are left in a crowded building with a mass of stalks that are in the first stages of decay. The exhalations from the stalk are absorbed by the leaf to a greater or less degree, if the weather is warm and damp the condition is worse than if cold and dry.

There is positively no element in the tobacco stalk that can be of the slightest benefit to the leaf, it cannot add anything to the leaf but its poison odors, but they do draw virtue or oil of tobacco from the leaf equal to six pounds to every one hundred pounds of the leaf grown.

See report from Experiment Station, page 37.

In this way, and for this reason a better cigar can be obtained than any other way. In the manufacture of chewing tobacco the bad condition of the leaf can be disguised by the use of licorice, sugar, molasses, and scores of nostrums, but the cigar stands on the naked merits of its composite leaf.

If the leaf failed in its growth, or more likely in its cooking or curing, the result is a bad cigar; there is no help for it and the man who buys it is sorry before it is half burned out, and he feels as if he had wasted his money and he is likely to give the vender a wide berth in the future. If a generous friend makes him a present of a cigar of this kind, the friendship is apt to be cooled at least as long as the flavor of the bad cigar remains. The proper growth and ripening of all the leaves on the cigar plant with the proper curing at once is a guarantee for all good cigars. It will cost no more after you have once got ready to cure than it does the present wasteful way.

The white vein is more prominent in seasons of abundant rains. The stalk and stem and veins grow rapidly, and a larger size in a wet season than in a dry one. The sap passages are both large and numerous and are hardened to a woody substance. Excessive wet seasons always produce this quality in tobacco crops. The remedy is in subsoiling and draining, get the roots of your plants above the water stand of your fields. This can be done by running furrows with a turning plow between the rows early in the season and turning them back again when the dry season comes. In cigar leaf the sure remedy is curing the leaf separate from the stalk, it is the only proper way to cure any tobacco and especially fillers and wrappers for cigars. The white vein in the crop of eighteen ninety-one will cost planters as much money as it would to have cured this crop by artificial heat. The extra weight and quality of tobacco would have more than paid the cost of the curing apparatus for the crop in Pennsylvania, Connecticut and Wisconsin. The difference between the two methods of curing the common Virginia leaf as shown by the North Carolina Experiment Station gives the leaf cure forty-one dollars per acre advantage. The difference where the white stem has to be contended with would be far greater.

CHAPTER XVI.

PRIZE HOUSES.

The Prize houses, so-called, are a distinctive and very costly feature of every loose leaf market There is no question about their being a necessity so long as men cure their tobacco leaves on the stalk and let them remain on the stalk until they find time or inclination to strip them off. These redrying or prize houses are not only very costly but they are wholly unnecessary; wrong in their conception, wrong in theory, and wrong in practice. They are no more a necessity in a tobacco market than a redrying house for corn, or wheat, or oats, in a grain market. If the farmer did not dry his corn before he brought it to the corn merchant then the corn dealer would need a dry house. If tobacco leaves are stripped from the stalk and cured they must, of necessity, be closely bulked at once. The bulk contains only what the barn cured at one curing and it is done in hot or warm weather, a sweat is at once organized in the small heap; the pile ferments, it is seasoned, and its keeping qualities are secured in the next ten days after curing. It is proof against the May sweat, that bugaboo of tobacco men. The May sweat comes to it in September, or any other month when the conditions of the May sweat are complied with. There is as much need to hang up a hay stack in the month of May that has been wintered over, as there is in hanging up a lot of tobacco cured and bulked in August, after it has lain in bulk two or three weeks. These great prize houses are filled with swarms of workmen who must be paid weekly wages, thus adding to the purchase cost of the leaf; the rent of the building or the interest on the money its cost must also be added to the purchase cost of the leaf. These sums added together make a large item of expense and will cut heavily into the profit and loss account of every leaf dealer in the country. But we don't stop here with our expense bills; the leaf dealer buys one hundred pounds and sells but ninety pounds; every time he buys and sells one dollar's worth of tobacco he loses ten cents, by loss of weight, and to this must

be added the wages of his prize house men and the rent of his building. We have handled about one hundred thousand pounds of leaf tobacco each year for a number of years past, and have not found need for a prize house nor have we during that time hung one leaf of tobacco for the purpose of redrying it, nor have we lost any tobacco by mould or other cause. If tobacco is cured right and compactly bulked as soon as cured, compact storage room is all that is necessary either with planter, leaf dealer or manufacturer. Tobacco is only fit for use after close storage and while it is hung in the air either with the planter or in the prize house or factory it is so much time lost, besides the weight which goes with the consequent and inevitable dissipation of the oil while being exposed to the air. As before said, the stalk draws organic matter of the highest importance from the leaf while in the process of curing. Wire cured tobacco comes in condition quicker than stalk cure in the same temperature or degrees of moisture. This is the universal testimony and there are good reasons why. The waxy elements are in the leaf stripped from the stalk that have been extracted from the stalk cured leaf, and in an atmosphere that will at once limber up a leaf of this kind, this leaf that is minus this waxy element remains dry. The leaf that has been cured right has the oil in it, if the wax has not been melted it is in the cells and when cured the leaf feels dry to the touch, if overheated, say one hundred and sixty or eighty and two hundred as is often done, then a rich leaf of tobacco feels sticky to the touch, the oil is dissipated or fried out of the leaf. When the leaf is hung up and as it becomes dry, the leaf is slow to come in case or limber enough to handle, and if the moisture in the air is sufficient to limber the leaf it also has in it sufficient moisture to cause it to mould if placed in bulk, hence the necessity of redrying houses.

A COOL, ICY FACT!!

The planters of the State of South Carolina have been growing tobacco for the last six or seven years. They began with the "Snow System" and have continued it to the present time. They have produced about one thousand pounds per acre by

taking all the leaves from their plants as they ripen and curing them. Their crops have been sold at an average of twelve cents per pound; this has been done during the market year of 1894 on the product of several million pounds.

The Virginia markets during the same year report six cents per pound, the average price, while less than six hundred pounds is the crop per acre, as seen by the census reports for the last twenty years. The difference between six cents per pound with six hundred pounds per acre, and twelve cents per pound and one thousand pounds per acre is eighty-four dollars per acre, or three hundred and thirty-three per cent. in favor of the South Carolina planters.

Has the Snow process of curing made the difference?

Mr. "Fairbanks" settled the quantity per acre and the tobacco buyer settled the quality of the tobacco. These frosty facts should be taken into consideration by every person who plants tobacco in 1895.

CHAPTER XVII.

SPECIFICATIONS

FOR BUILDING A "MODERN TOBACCO BARN" 16X20 FEET INSIDE MEASURE AND 20 FEET HIGH.

Select a hill-side with a slope of about 2½ inches to the foot. Commencing at the lower side, dig an excavation 16x20 feet into the hill-side. This will bring the upper side about 5½ feet from the surface, the floor being level. Then dig a trench around the four sides of the excavation, on the inside, one foot wide, of the same depth. Fill it with small cobble stones or coarse gravel to serve as a foundation and to act as a drain. On top of the stone or gravel build an 8-inch wall of good brick or stone with strong lime mortar. The wall should be 5½ feet high on the four sides, level on top, making a basement. In the lower or exposed side of the wall leave an opening for the door, in the center of the wall. The opening should be 5 feet high and 2½ feet wide. Leave openings on each side of the door 3 inches from the ground and 22 inches from the side walls, through which the ends of the stoves may project far enough to be within 4 inches of the outside face of the wall. The doors of the stoves open outwards and the fuel is fed from the outside. Set the stoves three inches above the ground floor of the basement. Cover the stoves with brick arches extending 2 feet beyond the rear ends of the stoves, and leaving an air space of 6 inches above and on each side of the stoves, forming jackets, the rear ends of the jackets to be left open. Directly over the stove doors and under the line or crown of the arches, leave openings in the wall 2x8 inches, the longer line horizontal. These are to admit fresh air as needed around the stove and within the arch. Covers to fit them regulate the quantity of air as required. In addition to these openings, two others are left.

one alongside each stove 10 inches square and with the tops level with the surface outside. Through these openings conduits made of one inch oak plank 10 inches wide for the top and bottom, and 8 for the sides, project and are extended inside the basement its whole length, sunk even with the top of the earth floor. Provide these conduits each with four holes 10 inches long and 4 inches wide through the cover, with sliding covers. These are to allow cool air to be admitted to the basement independent of what is let in through the open arches. This completes the basement. The chimneys as illustrated in the "interior of basement" can be improved upon by extending the return flues to the outside of basement, through the wall, and build the chimney on the outside, to the height of the basement wall, where the terra cotta can be placed and clamped to the outside of the gable end of the barn as easily as on the inside, or run the chimney of brick all the way up which will leave the entire interior space in the tobacco room clear for the curing of the leaf. Heretofore the terra cotta have been put up inside, where they have occupied space that was valuable to the curer.

The barn superstructure is built as follows: Sills 4x6 inches are framed and set on the walls, the 4-inch side resting on the walls. Set the joists and lay the floor strips $3\frac{1}{4}$ by $1\frac{1}{4}$ inches, leaving open space $1\frac{1}{4}$ inches between each of them, except those within 2 feet of the walls on three sides. Here the floor is closely laid. The floor is open in strips at the door end of the building. Set the studding exactly 18 inches apart. Set the rafters one-third pitch, make the sheeting of good square-edged planks. Shingle the roof. In the sheeting and shingles leave an opening 15 feet long and 8 inches wide at the peak of the roof for the ventilator, which is made and shipped by us. Sheathing paper is nailed on the joists and the whole is ceiled. Each pair of rafters must have collar or wind beams made of plank 6 inches wide and $1\frac{1}{4}$ inches thick, fastened securely at the foot 6 inches above the plates. The first set of scaffold beams is set 7 feet from the floor on two sides and one end of the building. The next set is set 6 feet above the first. The window frames are for two 6 light 10x12 glass. The frames are set one in each end 8 feet from the floor. The stanchions will be set by us in all cases. The conduits above mentioned when preferred.

BILL OF FRAMING FOR MODERN BARN.

We append below detailed specifications, measurements, etc., of the Modern Barn. The planter can usually buy the main materials, except perhaps the proper shaped stoves and chimneys, near home. What are put down as "Inside Fixtures" we supply ourselves. They are all patented, not only in themselves, but their application to the barn; and without them the barn is of no value for curing tobacco. They are all officially stamped, and any person caught imitating and using them, or selling them, will be promptly prosecuted. The planter can build the barn and we will supply the Inside Fixtures, or we can supply all the materials and send experienced men to erect and put it into perfect operation. In the latter case, to cover all outlays, the barn will cost from $475 to $550, depending on distance, local conveniences, etc.

20X16 FEET INSIDE MEASUREMENT.

2	Sills 4x6—21 feet long	84 feet.
2	Sills 4x6—17 feet long	68 "
11	Sleepers 2x9—17 feet long	208 "
4	Corner Posts 4x6 inches—20 feet long	160 "
4	Door and Window Posts 4x4—20 feet	108 "
44	Studding 2x4—20 feet long	572 "
2	Plates 2x4—21 feet long	28 "
2	Plates 2x4—17 feet long	22 "
8	Pieces 1¼x6—16 feet long	80 "
24	Rafters 2x4—12 feet long	200 "
	Sheeting 1x12 inches	450 "
	Flooring 1x3 inches	300 "
	Total	2280 "

DRESSED LUMBER.

Drop Siding 1x8 inches—2000 feet.
Ceiling ½x8 " —2000 "
Corner Beards 1x4—80 feet.
Ventilator complete.
Scaffold Braces—50 feet.
Scaffolds 1x9—225 feet.
Paper Lining—72 pounds.
4000 Shingles.

DOOR FRAMES, ETC.

Door Frame 3x6 feet.
Door 3x6 feet.
Hinges and Lock.
Nails for entire building.
2 Window Frames and Sash—8 lights glazed—10x12.

INSIDE FIXTURES.

4 Sets Stanchions.
52 Racks.
728 Sticks.
1 Set Pulleys, Drums, etc.
25 Baskets.

BASEMENT.

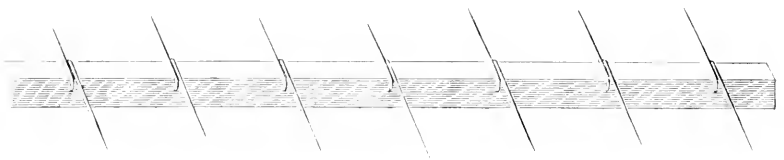
4300 Brick Wall, 5½ feet high.
2 Stoves 17x24 inches x 4 feet.
Flues for stoves in basement.
Terra-Cotta Chimneys, 27 feet high.
Conduits for basement—120 feet.
Door and Frame.

Four or four and one-half feet, seven wire Sticks for the log barn, to use on the tier-poles.

CHAPTER XVIII.

WHAT LEADING PLANTERS SAY ABOUT SNOW'S MODERN TOBACCO BARN AND STICKS.

THE SNOW STICK UNEQUALLED.



THE TESTIMONY OF TWO YEARS.

THE "SNOW BARN" AND STICK UNEQUALLED—IT HAS EVERY REQUISITE NECESSARY TO YIELD THE LARGEST PROFIT TO THE TOBACCO PLANTER.

Mr. F. M. Rogers, of Florence, S. C., wrote as follows in 1860:

"As before stated, I have tried myself or seen tried nearly all the methods of hanging the leaves—namely, horizontally, which is too tedious; stringing with the needle and twine, just as objectionable, besides running the leaves too close together, unless pains are taken to separate each leaf, which kills too much time; next, rubber bands, which is the most expeditious way to fill a barn, but by far in the most objectionable condition to have it, from the fact that you have it pressed tightly together—especially is this the case when the tobacco wilts. There is little chance of heat getting between the leaves at the proper time; you can make no calculation. The circulation of heated air passes up through the opening between the sticks, where it will benefit only the outside leaves; very little going between them, where it is chiefly needed. You are apt to cure it too green or yellow. Even if you should strike it right, it cures a dingy, dull reddish color, rather than the clear yellow which is the aim of every curer to

obtain. The stem will be hard to kill out, will have to continue on the leaf too long, and run the risk of further damaging its color and detract from its weight. It is poor economy to save a dollar or so in filling a barn and lose $30 or $40 by imperfect curing.

"The Snow Stick I have found satisfactory in every way. Barns can be quickly filled; each leaf is properly spaced; the ventilation is equalized in every way. More tobacco can be successfully cured in one barn than when strung in any other way. I have not space to go into minute explanation of its merits, but suffice it to say that it is the best arrangement on which to hang tobacco within my knowledge. In a word, the Snow Stick is unequalled."

In 1890, Mr. Rogers writes thus:

Capt. W. H. Snow, High Point, N. C.

Dear Sir:—Yours of the 4th inst. at hand. I am a stronger advocate of tobacco cured off the stalk than ever. That the leaf cured in this way is far superior, I am fully convinced, from handling it in our manufacturing business during the last few months. For the farmer, it is the way to get the greatest profit from an acre, because it can be saved and cured better; and that it is heavier, I know from experience.

Yours truly,

F. M. ROGERS, Jr.

DOUBLE TESTIMONY.

A YIELD OF AT LEAST ONE THIRD MORE BY THE "SNOW TOBACCO STICK"—FIFTY-THREE DOLLARS PER ACRE FROM PRIMINGS—$340.01 PER ACRE REALIZED.

Early in 1890, Mr. L. F. Lucas, of Lucama, North Carolina, wrote:

Capt. W. H. Snow, High Point, N. C.

Dear Sir:—I cured all my crop of tobacco last year (twenty-five acres) on the Snow Tobacco Stick, and think that my yield was at least one-third more than it would have been if I had cultivated and cured the old way, stalk and all together. I commenced

priming and curing on July 9th. In this priming I did not get the lower leaves off so as to properly plow and hill my tobacco. When I took this tobacco out of the barn I shipped it to the Henderson market (Cooper's). Mr. Cooper had it graded, and sold it July 20th for 10 cents, 30 cents, 65 cents, 41 cents, and 11 cents, making an average, with trash out, of about $23, and netting one about $23 per acre. I primed and worked out my tobacco again about July 26, with better results—about $30 per acre. My tobacco was then a full growing crop, and I with $53 per acre in my pocket or paid to my creditors. My neighbors all used the Snow Sticks, and got good prices for their tobacco, and more money per acre than those who did not use the Snow Stick. I sold tobacco cured on the Snow Stick for $2 per pound. I think each and every tobacco farmer should have a set of the Snow Sticks for each barn that he may have. I would recommend this even to those who will not part from the old method of curing the stalk, as they could make a net saving of enough tobacco that they would otherwise throw away to buy half a dozen sets of Snow Sticks, and I am sure that I know of no other stick on the market that I would have as a gratis when I could get the Snow Stick at the price he asks for it. Our people are preparing for a large crop this year, and I am sure you will sell a set of your sticks for each new barn going up in this section, where their merits have been so well tested, and so much saved that has heretofore been thrown away—yes, enough to pay the expenses of the tobacco crop, and that would otherwise be cropped off and thrown on the ground. Hoping you will send your agent around to sell more sticks in this section, in time enough for the farmers to save all their primings, I am,

Yours very truly, L. F. LUCAS.

Note.—With this letter the warehouse receipts were sent us.

On the 2d inst. Mr. Lucas wrote thus:

Capt. W. H. Snow, Superintendent Modern Tobacco Barn Co.

Dear Sir:—I have not heard the first complaint from any one who used the Snow Tobacco Stick this year. Three-fourths of the farmers used them this year in this section, and say that they will want more next year. I know of one man who turned to the stalk tobacco cure this year, but says now that he never expects

to cure another stalk. On November 20, 1800, I sold one curing at T. N. Jones & Co.'s warehouse, Raleigh, for $340.01 net. This curing was made on the Snow Stick, and was a piece of tobacco that I took all off the stalk at one time, except one priming, and worked up a larger proportion of heavy wrappers than any curing I ever saw. The result was as follows:

187 pounds Tips, at 10½ cents	$19 63
65 pounds Lugs, at 21½ cents	14 62
1092 pounds Wrappers, at $28 net	305 76
Total	$340 01

This curing, as you see, weighed 1344 pounds, and I am sure that I will have 500 pounds more on the same acre, and it will bring somewhere near $500 per acre at the present low price of mahogany wrappers. If heavy wrappers were worth now what they were last year in February, the one curing would have sold for $500. I will send you a few pounds of heavy wrappers that were cured on the Snow Stick, to put on exhibition at your office.

Wishing you much success in manufacturing the Snow Sticks, Dixie Darling, etc., at your new site in Oxford, I am yours,

Very truly, L. F. LUCAS.

INCONTESTABLE EVIDENCE.

Cartersville, Va., March 19th.

Correspondence Southern Tobacconist.

Messrs. Editors:—It is a singular fact that the majority of mankind resist change, innovation, what we call progress; nevertheless, the world moves on and advances, otherwise we would still live in the dark ages, as possibly we do, in ignorance of the fact, by comparison with what is to come after us.

After all, it is probably best for mankind and the world that we do not accept new things until they have proved themselves under the crucial test of time to be worthy of acceptance, else the world would move too fast. This resistance to progress acts as a governor to keep the machinery regulated.

No class of persons are as slow to adopt new things as tobacco planters. Many of them are content to remain in the ruts of two

centuries, where they will probably die, leaving them and nothing else as a legacy to posterity.

Under the head of "Progress Among the New Things in Tobacco Culture," I wish to call your attention to what is known as "Leaf Curing," that is, beginning at the bottom and gathering the good leaves, from two to four at a time, as they mature and are ready for curing.

Tobacco should always be planted as early as possible and on quick, rich soil, with plenty of vegetable mould and manure of some kind in the land. With a favorable season, you can begin to gather the leaves in from sixty to seventy days. This should be done in baskets prepared for the purpose, and with care not to bruise. They are carried to the house and then taken from the baskets and hung on sticks or strings. By far the best device that I know of being the Snow Stick, described in your journal; indeed, I do not see how this can be improved on. In a week or two these same plants will be ready for another gathering of leaves, and so on to the end of the season.

Now, Mr. Editor, I do not speak of this matter from hearsay or reading, but from actual trial and experience. After a thorough test of it during the past curing season, I unhesitatingly pronounce it the best method I have ever seen, tried or heard of for housing tobacco. It cures better and more quickly. The quality of the leaf is better. You can begin by the 15th of July to house your crop, and instead of having to crowd this work into a very short time, as is usual, you have almost the entire summer for it. You will make more pounds to the acre than you can possibly do by the old process. You will not decrease the weight of the leaf. You will reduce the risk of loss from frost to a minimum. You will give employment to a class of labor heretofore unemployed.

Without doubt this is a departure from old methods in the line of progress; it is a great change, the new process that will give us a much higher grade of tobacco. I cannot too strongly urge my brother planters not to pass it by, but to look into it, study it, and you will adopt it. You cannot afford to be left by all other sections in the improvements that are taking place, in the varieties, the culture, and the methods of handling and curing this staple crop.

Truly yours, EDUMUND R. COCKE.

TESTIMONY OF MR. PRICE.

In 1889 Mr. J. V. Price, of Hogan, N. C., wrote as follows:

Hogan, N. C., November 18, 1889.

Capt. W. H. Snow:

1st. Your plan has saved tobacco for me which otherwise would have been lost, and it brought me more money than the leaves higher up the stalk.

2d. I saved 3500 pounds that would have been lost, and sold it at an average of 20 cents per pound. This is a low estimate.

3d. The way is better, because the work is lighter and more systematic.

4th. It requires one-half less barn room.

5th. It requires much less fuel, and is, I am quite sure, the correct way to handle tobacco, and I recommend every progressive farmer to give it a fair trial. Yours,

J. V. PRICE.

On December 2d Mr. Price writes as follows of his 1890 crop:

Capt. W. H. Snow, Superintendent Modern Tobacco Barn Co., High Point, N. C.

Dear Sir:—The Snow Barn and Sticks have come to stay in this neighborhood, and no intelligent man having once tried your process would ever return to the old stalk cure. Below I give you particulars of my crop, etc. I planted 90 acres, got a good stand and all topped by July 15th. Commenced priming same date; cured 20,000 pounds cutters and smokers, which will bring an average of 15 cents, most of them being sold at this date. By the old method these would have been thrown away. The balance of the crop was cured as soon as the cutters were off; got 35,000 pounds of No. 1 wrappers and fillers; remainder unfortunately got over-ripe and lost in body and texture. Your Barn, however, came to the rescue, and the 15,000 showed up fairly well—much better than I could have done by curing on the stalk. The 35,000 pounds is as good rich tobacco as was ever grown in North Carolina, or anywhere else; the 15,000 pounds would have been the same, but for my misfortune in having only two instead of three barns. I cured it all in two Snow Barns

with a log barn on the "Snow" plan. To have cured the crop I would require thirty log barns. I saved 100 cords of wood, and gained I am quite sure, 10,000 pounds of tobacco by using your sticks. Would have gained more had I had two more Modern Barns. The advantage of your process lies in its being so systematic, a uniform cure is always certain, and the making [illegible] distinct types. It generates a pride and desire to do better and learn more about tobacco. In curing what I do now, I could do it about any trouble I have cured my crop in three following distinct types smokers and cutters, rich fillers, and mahogany wrappers. By taking the leaves at the proper time, no inferior or nondescript tobacco will be raised or cured by your process.

To show you that I feel confident of the success of your process, my brother and I will next year plant 150 acres in tobacco, and will build 12 more barns on the "Snow" plan. With our experience we know how to handle it [illegible] any trouble. I would not now be afraid to plant 500 acres, had I the capital.

Wishing you every success,

Yours truly, J. V. PRICE.

THE GREATEST DISCOVERY OF THIS WORLD "TOBACCO" KNOWN.

Richmond, Va., November 17, 1879.

H. Snow, Esq., High Point, N. C.

My Dear Sir: You ask my opinion of the "Snow Barn" process of curing tobacco by flues, as compared with the old way. I will answer you best by saying just as the scythe and cradle was superior to the old hand sickle, and at last the McCormick reaper as superior to both, all its points of economy in saving all kinds of grain over the old way, the "Snow Barn" is relatively as far ahead of the old mode of curing tobacco, just as the McCormick reaper opened up markets for our wheat and flour the world over, making it possible to supply the world with bread a thing that could have been impossible by the old method of harvesting. The new mode of flue curing "bright" by Snow's process will revolutionize the tastes of tobacco consumers the world over, by making it possible to furnish the mild, silky cutter, smoker and filler to fill a want that could not possibly be filled through the old way of curing.

I will sum up the advantages of "Snow's" process as follows: It cures tobacco as it ripens, always catching the leaf in its best condition for curing; neither too ripe nor too green, and always curing bright, regardless of adverse seasons.

This mode insures early summer temperature cures, and consequently yellow cure, while the old way is hazardous at best and under the most favored conditions.

All manufacturers are aware of the great improvement brought about by depriving the leaf of the main stem before sweating it sweet; that is the secret of St. James Parish Perique tobacco being so vastly superior to other kinds, for the mid rib is taken out while it is semi-green and before the leaf has time to absorb its objectionable flavors, and hence the Perique is faultless as a smoke of high and distinctive flavor.

Mr. Snow correspondingly improves the quality of the leaf by stripping it from the stalk, and if he could go further and deprive it of the mid rib, its quality would be still further enriched,—so much for quality.

Now for economy. While the stalk men are waiting for the top leaves to get ripe and the rest of the plant to get over-ripe and otherwise deteriorate, the Snow economist is gathering and curing his by twos and fours. When the stalk man is ready to cut his, Snow has his all in the barn, beautifully cured; or, which is more probable, has it marketed and the money in his pocket, say just four and a-half months after planting, leaving possibly two top leaves on the stalk, to be taken when they fully granulate in the late chilly fall, to supply the market with the sweet meaty fillers and rich mahogany wrappers.

Snow's tobacco is safe—yes, safe every year; no frost scare has forced him to cut it green, and he has no trouble or anxiety with low frost temperature in curing, no miss-cures, no vexation in stripping and assorting by unskilled hands, for nature assorted his for him in its order of ripening. All this is the economy side.

Now, with Snow's Barn, Burley tobacco, new ground or old sod land tobacco will make the finest cigarette and pipe stock (resembling the Turkish tobacco in flavor), the best in the world for this exclusive purpose, and adding from 300 to 500 per cent. to its market value over the air-cured product of Kentucky. It can all be cured fancy brights. Old ground Burley will make the finest export stock, without an equal in mildness, color, tex-

ture and quality combined. It will force a market for itself in countries which our Virginia and North Carolina brights have never been able to reach on account of the uncertainty of our annual yields, the mishaps of our cures and the almost interdictory price it demands in years of scarcity. By the Snow process we can always furnish foreigners with matchless cures every year, bad crop years and good years alike—since all Burley cures yellow by flues.

We have a lot of primings, usually left on the stalk in the field by Kentucky planters, cured by Snow's Barn from the crop of Wm. Z. Thomson, Georgetown, Ky., that is worth from $20 to $25 per 100, as Cutters, on our market to-day. Had the whole crop been cured by flues it would, with the same successful management, have realized him $30 to $40 crop round.

In conclusion we regard the Snow Barn the grandest discovery of this agricultural age. Respectfully,

[Signed] S. P. CARR.

FORTY YEARS' EXPERIENCE.

Hyco, Va., November 24th, 1890.

Capt. W. H. Snow, High Point, N. C.

My Dear Sir:—An experience of forty years in raising every class of tobacco grown in the United States enables me to say that the Modern Tobacco Barn, in all its appurtenances and fixtures, meets every requirement for curing tobacco better than any that has ever yet been devised, for it is constructed on scientific principles in applying artificial heat in drying the tobacco leaf on the most approved method, as regards safety, economy and certainty in fixing the color and preserving the quality. And it is surely destined to come into use for curing all the classes and types of tobacco, when its merits and capabilities shall become known.

It will require time, however, to bring it into general use among a class of farmers who heretofore have clung tenaciously to old methods, very many of whom look with suspicion and prejudice upon anything new and progressive in any department of tobacco raising. I know this prejudice to exist, for I have been combating it for 20 years, in efforts to introduce newer and

better varieties for the several classes and types of tobacco raised in this country. But there are unmistakable evidences that the spirit of improvement is being aroused, for greater progress has been made in the tobacco planting industry during the past decade than in the 50 years previous.

The Snow Barn is sure to win confidence and favor after a fair trial, because it meets the requirements of progressive tobacco farming for the finest class of tobacco, as no other barn has ever done. It came to fill more than one desired want, and has come to stay, and, like every other useful invention, it is destined to be improved upon through supplemental invention in the direction of perfection, until no planter can afford to engage in tobacco planting without availing himself of the use of the best methods of curing his crops.

Yours very truly,

R. L. RAGLAND.

The following, from the pen of Mr. J. B. Smith, of Milton, North Carolina, will be read with interest and profit. It was originally published in the Southern Tobacco Journal:

"As I have had, perhaps more experience in the process of stripping leaves from the stalk in the field than any other planter, I have been requested to prepare an article for the benefit of our farmers in the Golden Belt of Virginia and North Carolina. I will say, by way of beginning, that if the object of the tobacco grower be simply to house his crop in the most expeditious manner, regardless of color and texture, let him adhere to the old process of cutting the plant. But if the object of the planter be to realize the greatest profit from an acre of land, at the least expense, then I unhesitatingly advise him to adopt the "new process" and strip off every leaf of his tobacco, as he will not only secure better color and texture, but also superior flavor and greater weight. Now, right here, Mr. Editor, while conceding the superiority as to the color, ninety-nine out of a hundred farmers who have never tried the new process will declare that it is not true about the increase of weight. And yet I am confident that I could convince the most incredulous and ignorant farmer in either State of the truth of the assertion, if I could have him come and see with his own eyes and feel with his own fingers. I

can show him tobacco grown on new ground, without the use of a pound of fertilizer, one stick of which, with only 32 leaves, just as cured, will weigh 1 pound 6 ounces. Now, this is equivalent to over a pound to 4 plants, while from a whole barn taken from the same land and cured on the stalk I challenge any one to find five stalks the leaves from which will weigh as much—or, better still, to pick 50 leaves out of that barn that will weigh as much. And the color and texture of the barn-cured on the stalk does not compare with the one pulled off, although it was the picked barn of my crop and cured by a man hired at a big price, in order to make a fair test, who, upon looking at the tobacco, was confident he could equal my barn of leaves, but upon finishing the curing, declared that no living man could cure that tobacco as well on the stalk as if the leaves were pulled off, and further said he never intended to cut another plant of tobacco for himself. But apart from ocular demonstration, I think I can convince every intelligent person that tobacco cured off the stalk is heavier. Every farmer knows that fodder pulled off and cured is heavier and more nutritious than when the stalk is cut and the blades permitted to cure on it. Because it is one of the laws of nature that applies to all animal as well as plant existence, "for the body, in the last struggle for existence, to draw sustenance from its extremities." And the tobacco plant is no exception to this rule. As soon as the stalk is severed this struggle begins; the stalk drawing sustenance from the leaves, or, as the tobacco-curer expresses it, "the sap is driven in the process of curing from the tip of the leaf upwards through the fibres and stem into the stalk." By the process of stripping the leaves, all of this drainage is prevented, for in less than five minutes after a leaf is broken off, a gum exudes from the stem and hermetically seals the pores in the butt end of the stem, and in the curing process all of the oils are retained in the leaf, which increases its weight and elasticity. I also find the stem and fibres are very much smaller. And the leaf when cured, instead of possessing a glued appearance, has a soft, spongy look, and feels like kid skin.

I will now briefly enumerate some of the most important advantages the new process has over the old:—

1st. The planter can begin to house his crop from two to four weeks earlier.

2d. Everything is saved and there is no loss by "firing on the hill."

3d. As the lower leaves are pulled off, those left on the stalk ripen up and yellow more rapidly, which enables the planter to get in his crop earlier in the season.

4th. Tobacco can be cured a more uniform color.

5th. Less fuel will be required.

6th. The risk of setting fire to the barn will be greatly lessened.

7th. The tobacco can be stored in a much smaller space, and with no danger of losing color, or of mould.

8th. By this process enough leaves, which are lost by the old process, will be saved to pay for the fertilizer necessary to grow the crop, also to pay for all extra labor needed in housing the same.

9th. It will help to solve the problem of over-production, by grading up the tobacco in our section so as to place us above the competition of those sections which grow low grades of tobacco, which in the past few years has proved so detrimental to our pockets.

Round Peak, N. C., September 12, 1890.

Capt. W. H. Snow, High Point, N. C.

Dear Sir:—I have cured two barns of tobacco on your sticks, and I am well pleased with them. The most tobacco raisers in my settlement have been to see me curing, and will all want your sticks to cure their next year's crop. I will be able to sell to all the tobacco raisers in my section next year. We have got all our lugs cured, the finest lugs I ever saw. Yours truly,

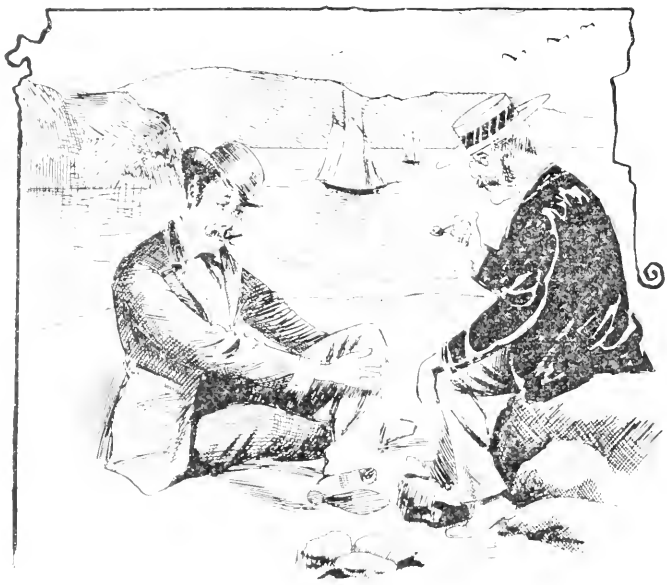
WILLIAM GOLDING.

Clover Depot, Va., November 1, 1890.

Capt. W. H. Snow, High Point, N. C.

My Dear Sir:—Would say in regard to your Wire Sticks that I am more than pleased with the result of them. I made the finest crop of tobacco I ever made in my life this year, cured almost my entire crop on your Wire Sticks, and would have cured every leaf on them had I had sticks enough. Would not be without them for double the cost of them. Think I will realize three hundred dollars per acre for a large portion of my crop. Would advise all who want to make a fine article of bright tobacco to use Snow's Wire Sticks. They are the best on the market. I am yours truly,

A. V. WOMACK.



TESTIMONY TO BE WEIGHED.

THE COST OF THE BARN PAID FOR BY TWO CURINGS OF PRIMINGS THAT HAD BEEN THROWN AWAY.

Oxford, N. C., July 24, 1890.

Modern Tobacco Barn Co., High Point, N. C.

Prejudiced as I was against the Snow Barn before I knew its merits, I make haste to congratulate you on the wonderful success of my first curing in the barn built by you for me. Your builder finished it on last Saturday night. On Monday it was filled with priming leaves. They have been taken out to-day. The cure is perfect. I will fill the barn again on Monday. The two curings of leaves that I have for years thrown away will more than pay the cost of the barn.

J. M. CURREN.

McCray, N. C., January 16, 1890.

By using the Snow Sticks in log barns—

1st. We saved about 1200 pounds of tobacco that we consider would have been wasted—about $200 worth. That is what we saved in one year and what it brought.

2d. The labor is a good deal less getting a pound of tobacco from the field into market.

3d. We can cure a crop of tobacco by the new plan in one-half the barn room that it would take to cure it in the old way.

4th. It don't take any more than one-half the fuel it would take to cure stalk and all. It is an improvement that we can cheerfully recommend to our brother farmers.

Your friends, J. F. & G. T. KING.

Home, Green Co., Tenn., November 28, 1890.

Capt. W. H. Snow:

I was born and raised in Southwest Virginia. Raised and cured tobacco for sixteen years on the stalk. I moved to Green county, Tenn.; there I found the model of the Snow Stick. I took it in study, and made my order. The sticks being delayed by railroad caused me to cure five barns by the old process; I then received them in time to cure two barns. After curing the first barn, I never was better pleased in my life. Cures finer and with less labor and less fuel, and cures a great deal more in a barn. I think it much heavier and better than the tobacco cured the old way. This is my experience in one year's usage. As for my experience, I never expect to cure any other way, only on the Snow Stick. Nine hands—men, women and children—are sufficient to fill a 20-foot barn in a day.

I will give you the beauty of this process: 1st. You save your primings and cure them. 2d. You then save your lugs, and so on till you are done curing. You bulk your tobacco as you cure it, and when you are done curing you are done grading; and, moreover, I am satisfied an industrious farmer can save enough primings the first year to save fertilizer and other expenses. By removing the lower leaves the tobacco ripens and thickens up faster; the reason why, because it gets more air.

Brother farmers, I will say this to you: If you will take hold and try those sticks you will never use any other.

Yours truly, JOHN J. FELTY.

The cashier of the First National Bank, Winston, N. C., writes:

February 26, 1890.

I have used the Snow Tobacco Stick in log barn during the season. I had about six acres in tobacco, and realized at the warehouse in Winston, where I sold my tobacco, $700. I think the device made for me not less than $200. One of its great advantages over the old method of curing tobacco is, that by its use, the early leaves of the crop are saved, and in addition to this, when the crop is all housed it is finished and ready for market, saving time and labor in the way of stripping the dried or cured tobacco on the stalk.

J. W. ALSPAUGH.

FROM FORSYTHE COUNTY.

Winston, N. C., November 10, 1889.

Mr. W. H. Snow:

I am well pleased with the Modern Tobacco Barn bought of you, and would not be without it for twice its cost. I saved all my priming leaves, cured them up nicely, and sold them for a fair price early in the season— the money coming in nicely to pay expenses of saving the remainder of the crop. By handling the tobacco in your baskets the leaves are not bruised, and are saved in better condition than when handled on the stalk. Also, it does not require nearly as much wood or barn room to cure a crop as in the old way. The barn has proven very satisfactory to me, and I can heartily recommend it to others.

Very truly yours, S. A. OGBURN.

WOULDN'T TAKE $1000 FOR IT.

I have used Captain Snow's Modern Barn and am exceedingly well pleased with it. I saved plenty of primings this year to fully pay for the barn. This tobacco I have always thrown away, and it was never worth anything to me. The cures I have made in the Snow Barn this year are far ahead of anything I ever cured in the old barns. I think the tobacco is worth nearly as much again. I have been growing tobacco about 35 years, and the Snow Barn is by far the best thing to cure tobacco in I ever saw.

I do think that tobacco cured in this barn will always average fully one-third more than in the old way. I would not be without the barn for $1000 if I could not get another. I like it, am pleased in every way, and expect to use it as long as I raise tobacco.

WM. MOTLEY.

Chatham, Pittsylvania Co., Va.

WONDERFUL RESULTS AT EARLY CURING.

The following testimonials show what the Snow Barn can do in the way of early curings:

Oxford, N. C., June 20, 1890.

Dear Sir:—We sold Wednesday, June 18th, a shipment of new crop tobacco from L. F. Lucas, of Wilson Co., this State, at an average of $46.10 per hundred. Mr. Lucas writes us that this tobacco was planted between April 25th and May 1st, 1890, primed off about June 9th, and sold as above. This beats anything ever accomplished in the cultivation, curing and sale of bright tobacco. As Mr. Lucas used your patent stick, which was a prominent factor in accomplishing this wonderful result, we take pleasure in sending you this sale. With best wishes,

Yours truly, DAVIS & GREGORY.

Summerfield, N. C., November 12, 1889

Capt. W. H. Snow:

I would say that I have used the Snow Sticks in my log barns for two years, and after calculation find that I have saved 225 pounds of tobacco per acre that I had formerly been throwing away or losing entirely by the old plan of curing on the stalk. I have saved and sold my first primings for the two seasons at an average of $15.75 per acre, which I consider clear profit. For my second primings last year I received $20 per hundred, which have been (by the old method of curing) my bottom leaves or trash lugs, that now sell at 4 or 5 cents per pound.

The labor of getting a pound of tobacco from the field to the barn is less by the new plan, as the work is made lighter by leaving the stalks on the hills. I also find that it takes only half as much barn room and half the quantity of fuel to cure a crop by the new plan. I am pleased with and heartily recommend the new plan as an improvement that my brother farmers should adopt.

Yours truly, J. M. McMICHAEL.

AN EXPERT'S TESTIMONY.

To Those Interested:

I have been asked to give my opinion upon the practical mode of the process of curing tobacco with the Snow Stick, or more commonly known as the wire process. I preface my remarks by saying I have been in tobacco, have handled and been intimately associated with this great staple all my life, and have watched closely every new device that has had for its object the improvement and lifting the burden off the shoulders of the producer, who had it to bear.

I know that it don't take a Solomon to say it, but the man who invents these labor-saving tobacco-curing outfits should be classed as a benefactor of mankind.

1st. By the use of the wire stick you can save the bottom leaves, which would otherwise be lost by firing.

2d. It don't require experts to gather and string these leaves—chaps ten years old can do it as well as men.

3d. By taking off the lower leaves as they mature you hasten the ripening of the plant—this alone is a decided advantage.

4th. The primings, or bottom leaves, thus saved, when cured, make first and second-class cutters, which, under the old way, while waiting for the body and top of the plant to get fully ripe or "grained" for the knife, is lost entirely—all of which when secured can be cured in your barn with less fuel. But from observation in this section, I have found in my travels that fuel is of but second consideration at present, but when you get regularly into tobacco you will find this item of wood of considerable import, and you would do well to commence in time to take care of it.

When I read the strong endorsement of the Snow Stick process by such tobacco men as Major R. L. Ragland, Hyco, Va., and F. M. Rogers, Jr., Florence, S. C., together with many others, I could not hesitate to give my full endorsement.

E. M. PACE,
Manager Wilson Tobacco Warehouse.

Washington, D. C., June 26th, 1891.

Dear Sir:—I have awakened a good deal of interest in Maryland regarding improved methods of cure and culture of tobacco, and have not hesitated to recommend your improved "Modern Barn" and fixtures. It would be well for you to have an agent in Baltimore at an early day, that the planters may be supplied with wires, baskets, furnace, etc., etc. You are at liberty to use my name as endorsing your wire leaf system throughout. Advertise in the county papers of Prince George, Charles, Calvert, St. Mary's and Anne Arundel, and I think it will pay you.

Truly yours,

THOS. N. CONRAD.

Capt. Snow, High Point, N. C.

Mr. Conrad was the Commissioner of Tobacco for the last census.

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